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ABSTRACT

There is little argument that the physician is the most expensive form of health manpower or that the physician is a critical decision-maker in allocating resources for the production of health-care services. Thus, their education and orientation have been singled out as intervention points when public concerns have emerged on cost containment and access to services. The primary goal of this paper is an exploration of several issues regarding the status of financing of graduate medical education, some of the policy issues surrounding graduate medical education financing, and some residual research questions. The issues handled include the financing of graduate internships and residencies through federal support, state and local support, patient revenues, and out-of-pocket dollars; graduate medical education speciality choice, geographic distribution, salary differentials, and future trends; and objectives, options, and issues in financing graduate medical education, including the possible implications of national health insurance. (JMF)

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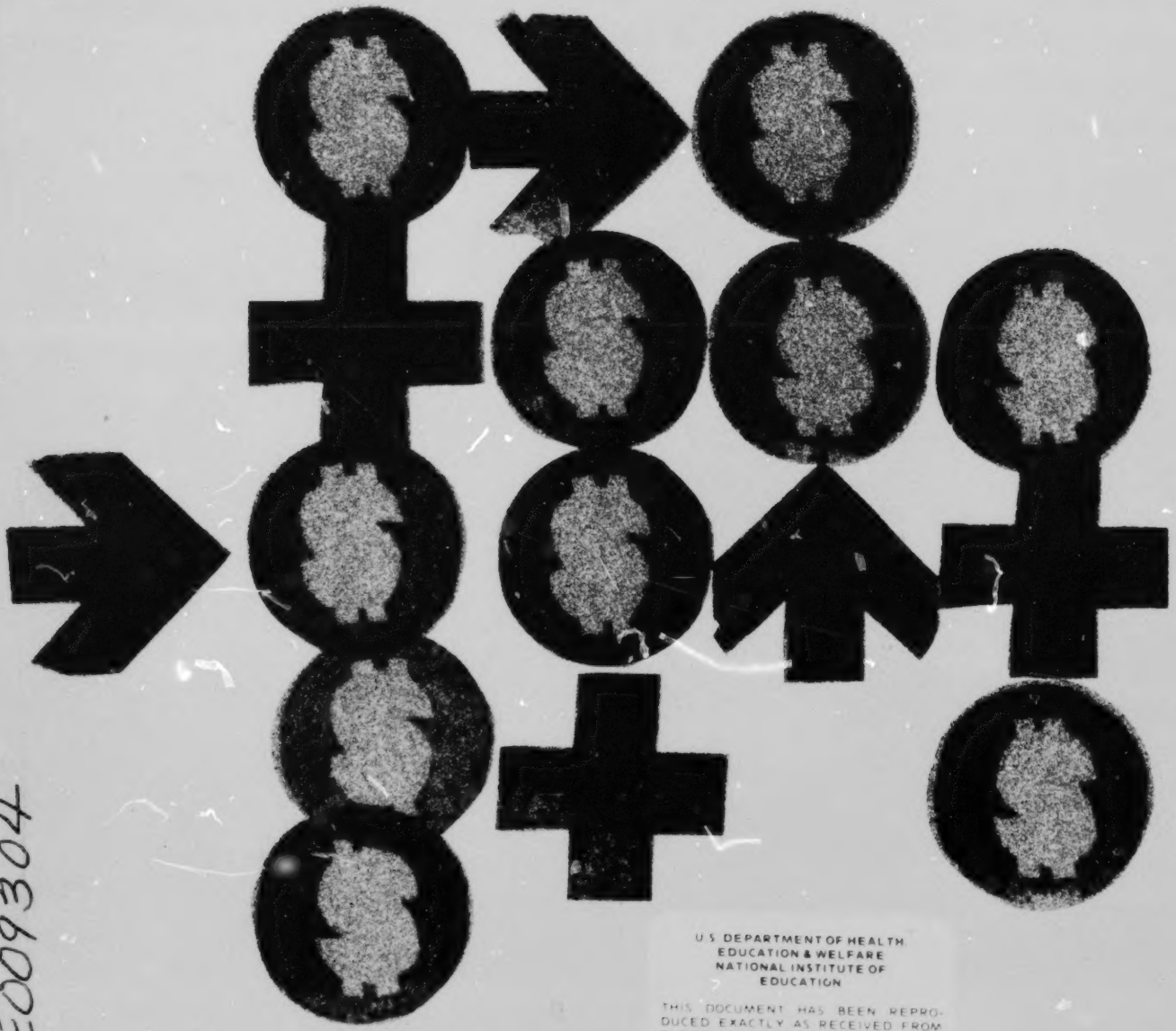
Financing and Reimbusement of Graduate Medical Education

A Background Paper



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U.S. DEPARTMENT OF
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Health Resources Administration

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FINANCING AND REIMBURSEMENT OF GRADUATE MEDICAL EDUCATION

Prepared by the Staff and Consultants
National Center for Health Services Research

As A Background Paper For

The Graduate Medical Education National Advisory Committee

March 1, 1977

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Preface

This paper has been prepared as a background paper for the members of the Graduate Medical Education National Advisory Committee. It is not an exhaustive state-of-the-art- paper regarding the literature on the financing and reimbursement of graduate medical education but rather a reference document to provide the members with some working knowledge of the current status of the financing of graduate medical education, some of the policy issues surrounding graduate medical education financing, and some residual research questions which we perceive. The data presented were those available in November, 1976, during the original preparation of this paper.

We wish to express our appreciation to all of the reviewers who added immeasurably to the final paper but take responsibility for any omissions or transgressions.

We also wish to acknowledge the excellent work of our typists, Mrs. Geraldine Jackson and Mrs. Linda Ward, in the preparation of this manuscript.

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CORRECTIONS

in

The Financing and Reimbursement of Graduate Medical Education
prepared by the Staff of the
National Center for Health Services Research
Health Resources Administration, DHEW

1. The opening sentence of pargraph 2 in the Introduction should read: There is little argument that the physician is the most expensive form of health manpower or that the physician is a critical decision-maker in allocating resources for the production of health care services.

2. Line 6 of paragraph 4 on page 22 should read: for 1973 (4814) and those shown in Table XI for 1973 (1100) offered, 1022.

3. Second paragraph, line 5 on page 43 should read: geographic distribution of residencies by census region and state from the Directory of Residencies of the AMA, 1976.

4. Figures in the second table on page 51 should be corrected in columns 1, 3 and 6 as follows:

Projection of Total Number of Residents and Total Annual Salary Costs

	1980					
	No.	Salary	Total	No.	Salary	Total
						$(000)
Primary	29,272	$19,042	$557,397	44,565	$49,045	1,918,300
Other	34,362	20,737	712,648	44,565	46,877	2,084,386
Total	63,634	--	$1,270,045	89,130	--	$4,002,686

5. The last paragraph on page 52 should begin: Section IV discusses the objectives of the teaching hospital...

I. INTRODUCTION

The health care industry is one of the most labor-intensive industries in the American economy. Any policy of activity which purports to alter the quantity, control the quality, or contain the costs of health care services will inevitably affect and be influenced by the supply and characteristics of personnel employed in the provision of these services.

There is little manpower that the physician is the most expensive form of health manpower or that the physician is a critical decision-maker in allocating resources for the production of health care services. In addition to providing their own highly valued services, physicians make decisions in the patients' behalf regarding the need for and duration of institutional care. Additionally, they have an influence on the use of many other professional and ancillary services and facilities. Thus their education and orientation have been singled out as intervention points as public concerns have emerged on cost containment and access to services.

Since the 1950's funding for the training of health professions has come from a complex array of government agencies which made the Federal government the principal source of funding for the education of physicians. This support caused the expansion and restructuring of graduate medical education with an emphasis on specialization. The biomedical-research training support also focused on specialization.

The seeds for these becoming major issues were planted in the legislation of the mid-60's that emphasized in-patient services. The Heart, Cancer, and Stroke Act of 1965 placed emphasis on bringing the most sophisticated technologies in medical care to all hospitals regardless of need. This further compounded the trend toward specialization by physicians in training. Exceeding the impact of this legislation, however, were the Social Security Amendments to the Public Health Service Act of 1966 establishing Medicare (Title XVIII) and Medicaid (Title XIX).

There had been a steady growth of third-party insurors for medical care since World War II but few of the patients hospitalized under such insurance were used in teaching hospitals to teach physicians in training. The patients who did serve in this capacity were those who occupied the so-called public beds subsidized by the hospital in return for some local, state, and federal support. This subsidization led to severe constraints on the number of residency positions that could be offered by teaching hospitals. With the advent of Medicare and Medicaid came the same "usual and customary" reimbursement received for services to other patients by third-party payors. Teaching hospitals were given an additional source of revenue and could expand their residency positions. "The keeper of the purse strings had changed."

It became evident to policy makers that while highly sophisticated technologies and physicians capable of delivering highly complex care served patients well, these patients were only a small percent of the population and a great inequity had grown between dollars spent on in-patient services, the training of physicians oriented toward the delivery of such services, and the access to ambulatory care services by the majority of the public.

A recognition of this inequity was contained in the support of Family Medicine residency programs under the Comprehensive Health Manpower Act of 1971 but a giant leap forward is encompassed in the Health Professions Educational Assistance Act of 1976 with its emphasis on preparing physicians to deliver primary, ambulatory care.

This paper is therefore organized into some sequential building of the various impacts of previous legislation and current sources of financing on graduate medical education and leads to:

- Implications for teaching hospitals for such a change in focus regarding the financing and reimbursement for graduate medical education.
- Potential impact of a national health insurance plan.
- Some options available to change specialty choice and geographic distribution through financing mechanisms.
- Need for additional information about the current status of financing for policy makers to make informed decisions.
- Needs for long term research on the outcomes of policy decisions.

The issues which emphasize the importance of policy recommendations regarding the financing and reimbursement of graduate medical education are discussed in detail in the paper:

- In-patient versus outpatient differentials by third party payors in the reimbursement for services as training moves to emphasize primary, ambulatory care.
- The vulnerability of educational costs as teaching hospitals move toward cost containment.
- Effect of financing patterns on how teaching hospitals decide the kind and number of residency positions to offer in order to meet patient care responsibilities.
- As costs of graduate medical education increase, the viable alternatives to teaching hospitals to meet their objectives of patient care, teaching, research and prestige.

The exploration of these issues for consideration by the Graduate Medical Education National Advisory Committee is the primary goal of this paper.

II. FINANCING GRADUATE MEDICAL EDUCATION (LIMITED TO INTERNSHIPS AND RESIDENCIES)

A. Background*

Fein and Weber stated in Financing Medical Education "The discussion of medical education usually focuses on the medical school and the first four years of the physician's professional training. Yet, one of the first things that strikes the analyst is the importance of the teaching hospital in the education of the resident. Unfortunately, the only institutional data that are collected and available on a somewhat systematic basis deal with the medical school." 1/

In "Financing Medical Education" Kaufman points out "Although the cost of educating the undergraduate medical student is substantial, available analyses of faculty and resource utilization indicate that the majority of the cost of medical education actually goes for graduate education--the education of interns, residents...". Thus, graduate education must be considered as much a part of medical education as undergraduate, and house officers receive an increasing proportion of the health care dollar as opposed to undergraduates. 2/

The growth of graduate medical education and its attendant costs was remarkable after the mid-60's decisions regarding reimbursement and recommendations that academic medical centers assume institutional responsibility for graduate medical education. During the late 1960's medical schools were mandated to increase the size of their classes due to a perceived overall shortage of physicians at that time rather than a maldistribution by specialty and geographic location. The combination of expanded sources of revenues for patient services (Social Security Amendments to the Public Health Service Act of 1966, "Medicare" Title XVIII and "Medicaid" Title XIX), increased the number of graduates seeking residency positions. The increased number of hospitals becoming affiliated with academic centers to provide these positions in response to reimbursement provisions and the demand for non-primary residencies is reflected in the trends in graduate medical education through 1974. (Table I)

---

* Excerpted in part from Medicare-Medicaid Reimbursement Policies, Social Security Studies Final Report, Institute of Medicine, NAS, March 1, 1976.

The number of internships increased steadily from 1962 to 1972, but dropped sharply in the last two years with the phasing out of freestanding internships, so that in 1974 less than one percent more were offered than in 1962. Residency positions, however, continued to increase markedly: in 1974 there were 53 percent more residency positions offered than in 1962. Much of the increase in the last three or four years results from the transformation of internships into first-year residency positions. 3/

Since the initial rapid growth in the 1950s, the greatest increase in the total number of internships and residencies offered was in the period from 1968 to 1974. During the same time, the number of teaching hospitals associated with medical schools almost doubled.

TABLE I. NUMBER OF INTERNSHIP AND RESIDENCY POSITIONS OFFERED (Selected Years 1946-74)

Year	Internships	Annual Percent Change	Residencies	Annual Percent Change
1945-46	8,429		8,930	
1950-51	9,370		19,364	
1955-56	11,016		26,516	
1960-61	12,507		32,786	
1961-62	12,074	-4	35,403	8
1962-63	12,024	-1	36,502	3
1963-64	12,229	2	37,356	2
1964-65	12,728	4	38,750	4
1965-66	12,954	2	38,979	1
1966-67	13,569	5	39,384	1
1967-68	13,761	1	41,695	6
1968-69	14,112	3	42,351	2
1969-70	15,003	6	45,351	7
1970-71	15,354	2	46,584	3
1971-72	15,422	*	50,198	8
1972-73	13,650	-12	51,658	3
1973-74	12,165	-11	54,137	5

Source: Directory of Internships and Residencies, 1974-75 (Chicago: American Medical Association, 1975).
*-Less than 0.5 percent.

Table II shows the distribution of residency positions by specialty and the percent changes for the five-year period 1964-74. Fourteen of the 23 specialties which offered residencies in 1963-64 showed a greater growth in the second five-year period. General practice, which increased slightly during the period 1964-69, showed a 35 percent decrease in residences filled in the period 1969-74. This decrease has been more than offset, however, by the growth in family practice residencies filled, from an initial 265 in 1971 to 1,765 in 1974. Recent data from the National Internship and Residency Matching Program indicate that in the fall of 1976 61% of U.S. graduates in first year residencies will be in primary care, currently defined as family/general practice, general internal medicine, and general pediatrics. 4/ The Health Professions Educational Assistance Act of 1976 (P.L. 94-484) gives priority to students selecting future primary care residencies and teaching hospitals providing these programs.

Formal postgraduate training in osteopathy was first recognized with the establishment of the Committee on Hospitals of the American Osteopathic Association (AOA) in 1930. This committee was charged with setting requirements for the training of interns and residents and developing guidelines to evaluate patient care within osteopathic hospitals.

In 1936, 18 osteopathic hospitals were approved for training 81 interns. By 1973-74, there were 67 hospitals with approved programs training 487 interns and 452 residents. 5/ One year of internship in an approved osteopathic hospital is required by 35 states for licensure.

Although the number of osteopathic internships offered has remained fairly steady, increasing only 19 percent since 1964-65, residencies offered have more than tripled in the same period (Table III). The distribution of residencies offered by specialty (Table IV) depicts the growth in training in the surgical subspecialties, internal medicine, pediatrics, pathology, and radiology.

Traditionally, hospital costs associated with graduate medical education, such as house officer salaries (which in 1975 averaged $11,250 per year for first-year residents in hospitals associated with a medical school) 6/ have been paid out of patient care revenues, or from state and local appropriations. These costs are included in the computation of hospital daily rates. In the Institution of Medicine's study of a sample of 81 teaching hospitals, house officer salaries represented an average of four percent of total expenditures. In recent years, concern has been expressed as to whether such costs should continue to be defined as patient care costs and, therefore, paid by or on behalf of the patient receiving care in teaching hospitals, or should be defined as education costs to be financed by the community at large.

TABLE II. NUMBER OF RESIDENCY POSITIONS FILLED (Selected Years, 1964-1974)

Specialty	1964	1969	1974	Percent Change 1964-1969	Percent Change 1969-1974
Total	29,295	34,609	48,869	18	41
Anesthesiology	1,145	1,502	2,008	31	34
Colon & rectal surgery	16	29	30	81	3
Dermatology	410	512	688	25	34
Family practice	-	-	1,765	-	a/
General practice	370	402	260	9	-35
Internal medicine	5,129	6,163	9,427	20	53
Neurosurgery	435	504	609	16	21
Neurology	503	684	981	36	42
Nuclear medicine	-	-	41	-	b/
Obstetrics & gynecology	2,457	2,503	3,183	2	27
Ophthalmology	969	1,238	1,500	28	21
Orthopedic surgery	1,388	1,573	2,268	13	44
Otolaryngology	621	873	995	41	14
Pathology	1,944	2,230	2,846	15	28
Forensic	-	-	31	-	c/
Neuropathology	-	-	57	-	d/
Pediatrics	1,820	2,185	4,231	20	94
Pediatric allergy	23	65	99	183	52
Pediatric cardiology	33	125	120	279	-4
Physical med. & rehab.	181	277	368	53	33
Plastic surgery	152	201	362	32	80
Psychiatry	3,274	3,620	4,315	11	19
Child psychiatry	343	473	588	38	24
Radiology	1,490	2,240	1,205	50	59e/
Diagnostic	-	-	2,009	-	-
Therapeutic	-	-	348	-	-
Surgery	5,656	6,064	7,131	7	18
Thoracic surgery	224	279	282	25	1
Urology	712	867	1,122	22	29

Source: Directory of Internships and Residencies, selected years (Chicago: American Medical Association).

a/ First offered in 1970-71 (265 positions).
b/ First offered in 1973-74.
c/ First offered in 1970-71 (20 positions).
d/ First offered in 1972-73 (56 positions).
e/ Calculation based on the sum of positions for radiology, diagnostic radiology, and therapeutic radiology.

If each beneficiary program were to pay its fair share of the house officer salary and other training costs within the hospital, an allocation of the house officers' time to the major programs to which they contribute -- education, patient care, their own learning, and, in some institutions, research --would be required. However, 67 percent of a house officer's time is spent in the joint activities of patient care and teaching or patient care under direct supervision, a joint patient care and learning situation for the house officer (Table V). Only half their time is spent in distinct and separate activities. A method such as the one used by the Institute of Medicine to determine the costs of medical student education, might be used to allocate house officer's time among separate activities. (See page 33)

TABLE III. NUMBER OF INTERNSHIPS AND RESIDENCIES OFFERED IN OSTEOPATHIC MEDICINE (Selected Years, 1948-74)

Year	Internships	Residencies
1948-49	325	NA
1949-50	350	NA
1963-64	NA	239
1964-65	540	NA
1968-69	568	652
1969-70	569	NA
1970-71	560	NA
1971-72	586	NA
1972-73	598	825
1973-74	643	889

Source: American Association of Colleges of Osteopathic Medicine, personal communication, November 18, 1975, IOM Study, p. 154.

NA: Not available

TABLE IV. APPROVED OSTEOPATHIC RESIDENCY PROGRAMS (Selected Years, 1963-1974)

Specialty	1963-64	1968-69	1973-74
Total approved programs	239	652	889
Anesthesiology	25	85	99
General practice	--	--	15
Internal medicine	48	122	169
Neurology	--	1	9
Obstetrics & gynecology	14	38	65
Ophthal. & otorhinolaryn	8	30	54
Pathology	13	46	52
Pediatrics	10	35	46
Proctology	--	--	1
Rehabilitation medicine	--	--	4
Psychiatry	--	44	25
Child psychiatry	--	--	3
Radiology	38	79	108
Roentgenology	6	5	3
Surgery			
General	65	129	146
Neurological	--	5	6
Orthopedic	12	29	66
Thoracic cardiovascular	--	--	3
Urological	--	4	15

Source: American Osteopathic Association, personal communication, November 17, 1975, IOM Study, p. 155.

TABLE [illegible]. PERCENT DISTRIBUTION OF HOUSE OFFICER TIME

Activities	Total	Principal	Graduate associated	Under-graduate associated	Independent
Total	100	100	100	100	100
Patient care total	67	64	70	73	71
Patient care with direct supervision	29	28	32	31	34
Patient care without direct supervision	38	36	38	42	37
Teaching with patient care	17	18	17	14	15
Learning	10	10	8	10	10
Teaching	2	3	2	1	2
Research	3	4	2	1	1
Administration	1	1	1	1	1

Source: Institute of Medicine. Study of 81 Teaching Hospitals

Definitions:

Principal teaching hospitals are those in which the medical school clinical department chairmen direct the graduate training programs in the hospital.

Graduate associated teaching hospitals have at least one medical school integrated graduate training program but may also have "independent" programs.

Undergraduate associated teaching hospitals have independent graduate medical education programs but medical schools may use the hospital for 3rd and 4th year medical students.

Independent teaching hospitals have no medical school affiliation 5/

Institutional Support of House Staff Salaries

There are three main patterns of institutional payment of house staff salaries. All the funds may be provided by the hospital, or the medical school acting as a transfer agent for public funds, or they share the costs between them.

TABLE VI. INSTITUTIONAL SOURCES OF PAYMENT FOR HOUSE OFFICER SALARIES*

Institution Paying Salaries**	Total	State Princ.	Local Princ.	Private Princ.	Local Assoc. Private	Grad. Assoc. Private	Ungrd. Assoc. Private	Independ. Private
Total	81	3	4	9	11	24	10	10
Hospital	50	5	-	3	7	15	10	10
Medical School	6	2	-	-	1	3	-	-
Shared	25	6	4	6	3	6	-	-

Source: Institute of Medicine. Study of 81 Teaching Hospitals
* For definitions, see Table V.

**At one site, the medical school and its associated hospitals have established a nonprofit corporation to select and pay the house officers in the corporation's approved training programs. The hospitals reimburse the corporation for their respective share of the house staff salaries, and the medical school shares the administrative costs equally with the hospitals.

Table VI shows the patterns of payment for the house staff salaries at the 81 non-federal hospitals sampled in the Institute of Medicine's study on Medicare and Medicaid Reimbursement Programs within the same hospital may have different sources of funds for house officers salaries (stipends*)

At 50 of the 81 non-federal hospitals, the full costs of house staff salaries are paid from hospital operating funds derived mainly from hospital charges to patients. Grants, gifts, endowment income, and income from the auxiliary enterprises of the individual hospitals comprise less than 15 percent of total funds. At the six hospitals which indicate the medical school as the payor of house staff salaries, the funds were obtained from state appropriations. State money is usually appropriated to medical schools to be used at the discretion of the school for support of its medical programs. However, the school often accepts responsibility for provision of care to the state indigent population as a condition for receiving the appropriations. Hence, at four of the six state hospitals where costs are shared by the hospital and medical school, the medical schools use state money for their portion. At the other hospitals in this group, several sources including local government funds, grants, and practice plan money are used to make up the medical school share of salaries. However, at 20 of the 25 hospitals where costs are shared, the hospital pays 75 percent or more of the salaries.

The Comprehensive Health Manpower Training Act of 1971 (P.L. 92-157) first provided grants to schools of medicine, osteopathy, or dentistry to assist in meeting the educational costs of the first three years of graduate training programs in primary care or any shortage area of physicians or dentists. This act also provided grants in the amount of $3000 per trainee to any public or voluntary hospital to develop approved training programs in family medicine. There were special project grants for curriculum improvement with emphasis on family medicine, interdisciplinary training and enrollment of students likely to practice in shortage areas, including minority students.

Table VII shows responses from training program directors about source of funds for house staff salaries in their particular programs. It is clear that the principal hospital training programs have access to more fund sources than those not so closely associated with medical schools. However, more than half of all programsrely solely on hospital operating funds; the second major source of support is state and local government appropriations. Most of the 88 programs indicating the medical school department as their source of funding use state appropriation money to pay house officer salaries. Medical service plan funds are used to support individual house officers in a few of these programs. 7/

*These are actual salaries but because of the educational component they are frequently referred to as stipends.

Included in the group who received support from multiple sources is a program for which the university hospital pays the salaries of all first, second, and third year residents from hospital operating funds, and the school pays fourth year residents from several sources including state appropriations and training grants.

Unfortunately there is a limited amount of hard data that give comparable information on the current financing of graduate medical education. A description of the studies providing the principal sources for the data cited or extrapolated in this paper are found in Appendix II. In the following text, therefore, we will attempt to define from these limited data the sources of support for graduate medical education and dollar estimates on the extent of that support.

There are three sources of support for graduate medical education: direct support of residency programs in federally financed hospitals; direct support by local and state governments of their patient care institutions; and indirect support through patient revenues from third party payors - private, state, and federal. This section attempts to look at all three. The impact of the first two will, in all probability, remain stable. The implications of the indirect reimbursement through patient revenues and whether this is an appropriate placement of an educational process within the delivery of medical services is a major issue.

This section, therefore, looks at the current status on the financing of graduate medical education from the direct (federal, state, and local governments) and indirect payments (third-party: private, federal, state and local) perspectives.

TABLE VII. NUMBER OF PROGRAMS BY SOURCES OF FUNDS FOR HOUSE OFFICER SUPPORT

Source of Funds	Total	State Princ.	Local Princ.	Private Princ.	Local Assoc. Private	Grad. Assoc. Private	Ungrd. Assoc. Private	I P
Total programs	407	122	27	78	44	56	44	
Hospital	245	26	19	41	40	39	44	
Operating fund	215	18a/	17	36	34	34	42	
Grants and operating funds	30	8	2	5	6	5	2	
Medical School	99	55	7	17	4	16	-	
Department a/	88	55	6	12	4	11	-	
Grants	10	-	-	5	-	5	-	
Department and grants	1	-	1	-	-	-	-	
Multiple sources b/	63	41	1	20	-	1	-	

Source: Institute of Medicine. Study of 81 Teaching Hospitals.

a/ These are mainly state and local government funds. A few programs at the private schools use practice plan money to support one or two fellows in the programs.

b/ Combination of hospital and medical school funds plus grants or contracts with other hospitals or agencies.

For definitions, see Table V.

B. Federal Support for Graduate Medical Education (excluding third party payments through matching funds* and Medicare subsidy which are included under D. below)

Previous data regarding the total number of house staff (interns and residents) who receive direct federal support shows that they represent only 15% of the national supply of physician manpower in training. This is based on the estimates that there are approximately 48,000 physicians in training in the private sector as opposed to some 7,000 physicians in training in the public sector including the Veterans Administration, the Department of Defense and the Department of Health, Education, and Welfare.

This support is derived principally from the Veterans Administration and the Department of Defense. The dollar outlays from the Department of Health, Education, and Welfare are concentrated on undergraduate medical education through the Bureau of Health Manpower (BHM) in the Health Resources Administration (HRA) of the Public Health Service. BHM has accounted for approximately 80% of DHEW's outlays for physicians' training annually since 1972 and almost entirely for the escalation in these outlays for DHEW between 1969 and 1974. (Appendix Table I) The Bureau's funds have been divided among the various types of training assistance in the past. About 80 percent of the total outlays have gone for institutional support, split fairly evenly between formula/capitation grants and other types of institutional grants. Most of the remaining money has provided student assistance in the forms of loans, scholarships, and traineeships. Its impact on graduate medical education has more to do with choice of the type of residency selected by the student under conditions specified in various scholarship and loan programs rather than financing. (Appendix Tables II and III)

There has been support of Family Medicine programs since 1971 which represents a small portion of the budget of the Bureau of Health Manpower but does indicate a thrust toward such programs in medical schools and teaching hospitals. Since this dollar value is so low in terms of the total budget for the Bureau of Health Manpower, it will not be considered further in examining the policy issues surrounding graduate medical education, particularly in terms of direct federal support. The following table shows the growth of Family Medicine programs, the total number of residents and the dollars expended. These figures must be viewed in terms of total expenditures for the development of such programs, including curriculum development, additional faculty, etc. and not in the mathematical exercise of total expenditures versus number of residents --

* Title V Maternal and Child Health for which no estimates can be made in this report. However, the patient revenues shown in Table XVI, page 35, from Medicaid represent a 50-50 reimbursement between states and the Federal government for services.

BHM SUPPORT OF FAMILY MEDICINE PROGRAMS

	FY 72	FY 73	FY 74	FY 75	Fy 76
Number Programs Receiving Support	52	82	137	150	116
Total Residents	550	1200	2000	2533	2088
Dollars	5.0	13.8	14.5	15.0	15.0

An additional policy issue has arisen regarding the ambiguity of the educational process as supported by these programs and the possible double federal reimbursement under Medicare for patient care services provided by these physicians in training with an indication that these must be delineated for reimbursement purposes. That controversy is clearly beyond the scope of this paper but gives additional credence to the issues of education versus patient services and who should pay.

In an attempt to define federal outlays and excluding the BHM contribution which focuses primarily on undergraduate medical education*, Table VIII shows outlays for physicians' training through direct federal support from DHEW. It has been comparatively low and consistant.

Following are some summaries of the Public Health Service support of graduate medical education:

* This disregards the $15M for Family, Medicine since as Appendix Table I shows, this is out of a total budget of $189M.

TABLE VIII

Federal Outlays for Physicians Training, by Agency
(excluding HEW/HRA/BHM)
Fiscal Years 1969-74
in thousands of dollars

	1969	1970	1971	1972	1973	1974
Total	123,386	132,721	144,355	156,193	163,029	217,207
DHEW Total	43,093	49,171	45,691	56,365	44,222	48,492
Public Health Service						
HSA: Health Services	3,207	4,895	3,282	4,062	5,512	8,018
Indian Health Services	686	860	893	642	615	665
ADAMHA	30,743	34,936	32,291	42,294	27,219	28,429
SRS	4,696	4,500	4,300	3,381	3,804	3,040
Other HEW*	3,761	3,980	4,925	5,986	7,072	8,340
Appalacchian Regional Com.	3	298	98	527	442	224
Department of Defense	32,187	24,120	32,121	22,088	27,664	67,303
Veterans Administration	48,103	59,132	66,445	77,213	90,701	101,188

*Includes Howard University and St. Elizabeth Hospitals

Abbr: HSA-Health Services Administration; ADAMHA-Alcohol, Drug Abuse and Mental Health Administration
SRS-Social and Rehabilitation Service

Source: Federal Health Spending 1969-74

The Health Services Administration (HSA) of the Public Health Service (PHS) encompasses the provision of health services as mandated in the PHS Act. These include, but are not limited to, the Indian Health Service Hospitals and clinics, PHS Hospitals and Clinics (Division of Hospitals and Clinics), Federal Prison Medial Facilities, and U.S. Coast Guard Facilities. The Public Health Service accepts residents through the PHS Commission Corps after the completion of one year of graduate medical education. In addition the PHS accepts residents classified under the General Schedule by the Civil Service Commission.

The increase in HSA outlays in Table VIII is a partial reflection of outlays for the National Health Service Corps scholarship program in undergraduate medical education. The National Health Service Corps (NHSC) was established under provisions of Public Law 91-623, December 31, 1970. The legislation authorized establishment within the U.S. Public Health Service of an administrative unit to improve the delivery of services to underserved communities and areas. The NHSC scholarship program established through P.L. 92-585 on October 25, 1972 was designed to obtain trained physicians and other health professionals for the NHSC. To be eligible the individual had to be enrolled or accepted for enrollment as a full time student in a program leading to a degree in medicine or other health related specialty. The applicants for scholarships have exceeded the number available. In 1974-75, 1480 scholarships were awarded averaging about $10,000 a year in tuition, fees and living expenses. Preference for scholarships was given to students on a basis of interest in primary care training, academic performance, and nearness to completion of academic training. Participants are obligated for a year of service in underserved areas for each year of support. Though there is no direct support for residencies, deferrals on "pay back" can be secured to complete residency training in family, internal or pediatric medicine. The impact of this endeavor is toward specialty choice and distribution for primary care providers in underserved areas. This is once more a small federal program which has gained added emphasis from the new manpower legislation. It is a very expensive program which has taken into account many of the options outlined in this paper.

Within the Health Services Administration also falls the Maternal and Child Health programs (Title V). Approximately $1 million each year of the Health Services outlays (HSA) has been spent by Maternal and Child Health program on grants to university-affiliated mental retardation centers. These funds support advanced training for physicians, with the ultimate aims of providing staff for the centers and increasing the numbers of physicians who specialize in the care of the multiplely handicapped child.

Within DHEW, Alcohol, Drug Abuse, and Mental Health Administration has the greatest outlay for medical education in DHEW, excluding HRA/BHM, $28 million (Table VIII). Figures showing the distribution of the funds between GME categories and institutional support for the training of undergraduate

medical students are unavailable. Insofar as GME is concerned, however, it would appear that that portion of the outlay represents the support of residencies in psychiatry that follow completion of basic residency training. They can therefore be classed with clinical fellows that the National Institutes of Health support for subspecialty residencies. (Discussed subsequently). The numbers of individuals are not great but the training is long and costly.

The Social and Rehabilitation Service supports residency training for physicians in physical medicine and rehabilitation, and summer fellowships for medical students in the same specialties. In 1973, 675 students received some support. The level of support overall declined from a high of $4.7 million in 1969 to a low of $3 million in 1974 (Table VIII).

The full impact of the decision by Congress in 1973 to discontinue support of training for NIH clinical fellows and training in public health and health services research for physicians and other health personnel is emerging in 1976-77 as the last of these programs are phased out. Table IX shows the support for clinical fellows for the year 1975-76. Even with substantial direct support from federal sources, 44% of the dollar support for clinical fellows comes indirectly from patient revenues, reflecting the general subsidy of GME.

TABLE IX

Distribution of Funding to Support Clinical Fellows
1975-76

Sources of Funding	Percentage of Dollar Support
Patient Revenue	44
NIH	23
VA and Other Federal	14
Private Foundation	10
State and Local Government	6
Medical School	1
Miscellaneous	2
Total	100

Source: COTH, Association of American Medical Colleges

Thus, we see that, even excluding the outlays by HRA/BHM, the direct dollar outlays by the remainder of DHEW for the training of physicians consist of a combined support for graduate and undergraduate medical education. Support to institutions and hospitals contributes to both particularly with the extent of affiliation of teaching hospitals with medical schools. Extrapolations or generalizations of the data presented must be considered estimates in lieu of unavailability of more precise information. It is obvious, however, from the total figures shown for DHEW in Table VIII, $48.5 million in 1974, that the majority of the federal non-military related health care dollars spent for GME is indirect support through third party payment (matching funds with states) and tax subsidy of Medicare.

Most analyses of medical manpower exclude the Veterans Administration and the Department of Defense because of their defined populations. They are included here because of that usual exclusion. Though the numbers may be small, they represent a significant dollar outlay in caring for the populations they serve.

In 1974-75 the VA participated in 988 residency programs for physicians. Of these, 856 were components of residencies approved in the name of a group of hospitals including, among others, university or medical center hospitals and VA hospitals. The remaining 132 were programs for non-VA hospitals providing varying periods of training. 8/

Table X shows the authorizations for intern and resident positions with dollar amounts for 1970-75 for non-career house staff. The increase in resident positions is reflected in the increased dollar outlay for the VA for physicians in training in Table VIII (page 19). The VA dual system may also account for the discrepancy between number of residencies authorized shown in Table X for 1973 (4814) and those shown in Table XII for 1973 (110 offered, 1022 filled). It also points to the artifact of reporting authorized positions without also reporting the number filled and by whom as shown in Table XII. This problem has relevance particularly to Foreign Medical Graduates. Of all federal teaching hospitals, the VA is the most dependent on FMGs in residency positions (Table XI).

The Veterans Administration established a career residency program in 1953 for recruitment and retention of physicians. Participants in the program incurred an obligation to remain in VA service for a period of time ranging from 12 to 24 months after completion of training. The obligation could be cancelled by repaying 90% of the difference between earnings received as a participant and the maximum that would have been received as a non-participant. The program was discontinued in February 1973 as neither cost beneficial nor an effective method of recruitment.

Now residents are "non-career," that is residents of hospitals of affiliated medical schools who spend 6 months or more at a VA hospital. The "shared residency" provision described in the current manpower legislation (P.L. 94-484, Appendix II) for part-time positions is similar to the non-career

program of the VA in that two or more individuals may "share" the same residency position offered by the hospital during any one reporting year. This confounds the difficulties of securing accurate information regarding physicians in training and shows the need for a uniform reporting system reflecting positions offered and percentage filled by percentage of time of residents.

TABLE X

NON CAREER MEDICAL HOUSE STAFF
Department of Medicine and Surgery, Veterans Administration
(Dollars in Thousands)

	INTERNS		RESIDENTS		TOTALS	
	Positions Authorized	Amount	Positions Authorized	Amount	Positions Authorized	Amount
FY 1970	451	$ 3,226	3,778	$35,900	4,229	$39,126
FY 1971	445	$ 4,154	3,878	$43,092	4,323	$47,246
FY 1972	542	$ 5,281	4,168	$49,141	4,710	$54,422
FY 1973	641	$ 6,460	4,814	$57,756	5,455	$64,216
FY 1974	694	$ 7,724	5,077	$68,519	5,771	$76,243
FY 1975	805	$10,305	5,714	$79,069	6,519	$89,374

Source: Administrative Operations Staff, VA. 1976.

In dollar outlays Table X shows the amount authorized for non-career house staff only while Table VIII (page 19) reflects total outlays for all physicians in training including "shared residencies" and career physicians. These two tables also exemplify in only one agency the difficulties in specifying GME costs given different years (Table VII-1974 and Table X-1976) and different bases for reporting.

All of the services in the Department of Defense (DOD) have programs which are directed toward acquiring physicians and dentists through education related programs. Individuals are commissioned in the services while still students or, in the case of officers already on active duty, undergo training while on active duty. As stated previously, these programs are ordinarily excluded in analyses of GME but they do have implications for the private sector in modeling service provisions. In addition, they serve a significant sample of the population, the young and middle-aged, in a "pre-paid" system from which much could be learned regarding costs of education versus costs of services.

They are also an additional resource to the private sector after completing their military obligations. Since little is known of this outside the Armed Forces, a brief description follows on the Army's recruitment format as an example of the Armed Forces in general.

Among the programs is the early commission program of the Army. Under the provisions of this program, students are eligible to affiliate themselves before graduation with the Army. Selected participants are appointed officers (2nd lieutenant) in the Army Reserves. Once professional education or residency training is complete, individuals are obligated to serve 2 years active duty. A similar program is the Army residency delay option available to medical school graduates. By electing to participate, students are permitted to delay active duty until residency training is accomplished. A minimum active duty obligation of 2 years is incurred by participants in the program.

To qualify for Army sponsorship of a residency program, applicants must be graduated from an approved medical school. While receiving specialty training, physicians will receive privileges and benefits of their active duty rank. Most residencies are conducted in Army hospitals. Residents must agree to serve 2 years of active duty for completion of residency training. Similar obligations are applicable for participants of the first year graduate medical education program. However, the training period for students in this program is only 1 year. During this time individuals also serve on active duty as commissioned officers. 9/

Table XI indicates that there were 502 internships and 2968 residency positions filled in FY 74 in federal programs and Table VIII (page 19) shows a dollar outlay of $67.3 million for these physicians in training.

Table XII shows the comparative salaries of residents in the uniformed services, the PHS Civil Service, and the private sector.

In summary, direct Federal support for graduate medical education has an impact beyond the recruitment and training of physicians into the Armed Forces and the Public Health Service. Once these physicians have served their obligations to the uniformed services they are potentially providers of medical care in the private sector. The non-career residency program of the Veterans Administration allows physicians to opt for careers either in or out of federal service. The VA residency program comprises over half of direct federal support for residency positions. However, the total number of residents including the Armed Forces, the Public Health Service (DHEW) and the Veterans Administration, receiving direct support for graduate medical education is small compared with the number of residents in the private sector. The impact of federal support for GME is principally in the form of indirect third party contributions through Medicare and the federal portion of Medicaid to patient revenues (discussed in D. below).

Section C focuses on direct support of graduate medical education by state and local governments insofar as approximations could be made from the data available.

TABLE XI: HOUSE STAFF IN FEDERAL FACILITIES BY TYPE OF HOSPITAL CONTROL

Control	No. of Hospitals	No. of Approved Program	Total Positions Offered Sept. 1, 1973	Positions Filled Sept. 1, 1973	Positions Vacant Sept. 1, 1973	Percentage Filled	Grads., US Canada Sept. 1, 1973	Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in Filled Positions	Total Residency Positions Offered 1975-1976
			Number of Internships				No. of Interns on Duty			
Federal										
U.S. Air Force	3	7	42	42	-	100	42	-	-	4
U.S. Army	7	41	182	177	5	97	177	-	-	86
U.S. Navy	5	54	135	121	14	90	199	2	2	62
U.S. Public Health Service	4	14	86	65	21	76	50	15	23	51
Veterans Administration	40	9	83	79	4	95	53	26	33	-
Other Federal	2	14	30	18	12	60	13	5	28	12
Total Interns	61	139	558	502	56	90	454	48	10	215
			Number of Residencies				No. of Residents on Duty			
Federal										
U.S. Air Force	5	31	373	311	62	83	310	1	-	415
U.S. Army	12	94	884	797	87	90	776	21	3	1,131
U.S. Navy	12	71	735	645	90	88	640	5	1	880
U.S. Public Health Service	9	24	167	125	42	75	114	11	9	207
Veterans Administration	100	124	1,100	1,022	78	93	425	597	58	1,328
Other Federal	5	14	98	68	30	69	50	18	26	130
Total Residents	143	385	3,357	2,968	389	88	2,315	653	22	4,091
Grand Total		524	3,915	2,470	445	178	2,769	701		4,306

Source: Directory of Approved Residencies, AMA, 1975-76. Excerpted from Appendix Tables IV and V.

TABLE XII

Medical Residents' Incomes - 1976

Current Monetary Income Only (Retirement Excluded)

DOD		$21 thousand
PHS - Commissioned Corps		$21 thousand
VA - Matches rates of local hospital that is the primary affiliation hospital of the teaching institution -		
	average	$14 thousand
PHS - Civil Service - Matches local prevailing rates		
	average	$13 thousand
Private Sector	average	$13 thousand

Source: VA and PHS-Civil Service, agency, data. DOD and PHS-Commissioned Corps, computed from pay and allowance tables.

Private Sector-Data from Council of Teaching Hospitals, AAMC.

For physicians in training, VA and the General Schedule for Civil Service match local rates. The DOD and Public Health Service Commissioned Corps treat residents as regular officers.

C. State and Local Support of Graduate Medical Education

If data on Federal direct support specifically for GME are difficult to break out, state and local data are even murkier. In the annual survey of its 400 constituent teaching hospitals (both public and private) the Council of Teaching Hospitals (COTH) of the Association of American Medical Colleges 10/ it was reported overall only 5% of dollar support for house staff came from state and local government (Table XV page 33). However, if sources of revenue in the 1974 sample of hospitals in the Institute of Medicine Study 11/ are examined, 26-30% of revenue for state and local hospitals (public only) comes from government sources (Table XVI page 35). While revenue percentages cannot be equated with house staff support percentages, it can be inferred from these data that substantially more is contributed to financing graduate medical education by state and local tax funds than is reflected in aggregate data that include both public and private hospitals.

When the COTH data are broken down by public versus private teaching hospitals, it corresponds to the IOM data. State and local funds were cited by 9 of the 58 state and municipal hospitals as the source of over 91% of support for interns and residents (Appendix Table VI). The implications of this for geographical distribution are related to federal support of state and local university affiliated teaching hospitals and medical schools. Research supported by the National Center for Health Services Research suggest that location of graduate training is an important determinant of practice location, particularly when combined with medical school training and prior residence. However, the retention rate of physicians varies significantly by state. 12/

Table XIII shows the number of intern and resident positions in state and local affiliated teaching hospitals. The most arresting figures are those concerning Foreign Medical Graduates who fill 28% of the resident positions in state and county hospitals and 62% in city hospitals

TABLE XIII

Number of House Staff, By Type of Governmental Non-Federal Hospital Control

Control	No. of Hospitals	No. of Approved Programs	Total Positions Offered Sept. 1, 1973	Total Positions Filled Sept. 1, 1973	Positions Vacant Sept. 1, 1973	Percentage Filled	Grads., US Canada Sept. 1, 1973	Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in filled Positions	Total Positions Offered 1975-1976
			No. of Internships					No. of Interns on Duty		
Governmental Non-Federal										
State	49	147	960	877	83	91	831	46	5	249
County	33	112	889	847	42	95	705	142	17	258
City	32	84	597	550	47	92	269	281	51	87
City-Council	11	28	180	167	13	93	153	14	8	43
Hospital District	10	39	170	149	21	88	124	25	17	55
Total Interns	135	410	2,796	2,590	206	93	2,082	508	20	692
			No. of Residencies					No. of Residents on Duty		
Governmental Non-Federal										
State	212	475	5,188	4,516	672	87	3,270	1,246	28	5,990
County	71	214	2,462	2,239	223	91	1,612	627	28	3,318
City	45	107	1,266	1,170	96	92	450	720	62	1,533
City	20	70	401	351	50	88	297	54	15	558
Hospital District	12	22	321	272	49	85	230	42	15	402
Total Residents	360	888	9,638	8,548	1,090	89	5,859	2,689	31	11,801
Grand Total	495	1,298	12,434	11,138	1,296		7,941	3,197		12,493

Source: Directory of Approved Residencies, AMA, 1975-76. Excerpted from Appendix Tables IV and V.

In Summary, it is not possible to segregate state and local government dollar outlays for GME from undergraduate medical education. Using the civilian average salary, $13,000 shown in Table XII, it can be very roughly estimated that for the 12,493 positions offered in 1975-76 with 90% usually filled, with approximately 30% of support coming from state and local appropriations (Table XVI, page 35), we can come to a very gross outlay by state and local governments for direct support of GME of $43.8 M.

It must be emphasized that this is an approximation of direct state and local support for residency programs and does not reflect the indirect contributions from patient revenues, e.g. Medicaid, in which state governments share these costs with federal support. An attempt to bring together these sources of support for GME based on third party payments (patient revenues) to teaching hospitals is presented in Section D.

D. Patient Revenue as Reimbursement for Graduate Medical Education

As noted previously, the preponderance of internships and residency positions are in the non-governmental teaching hospitals. The incumbents in these positions are usually referred to as "house officers." Table XIV shows the distribution of these positions. "Combined hospitals" designate hospitals in which residency programs are supported by combinations of several hospitals under different types of control. "Non-Profit Corporation" designates voluntary community hospitals. "Proprietary" are for-profit hospitals.

TABLE XIV

Number of House Staff, By Type of Non-Governmental Hospital Control

Control	No. of Hospitals	No. of Approved Programs	Total Positions Offered Sept.1, 1973	Total Positions Filled Sept. 1, 1973	Positions vacant Sept. 1, 1973	Per-centage Filled	Grads., US Canada Sept. 1, 1973	Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in Filled Positions	Total Positions Offered 1975-76
			No. of Internships				No. of Interns on Duty			
Combined Hospitals	90	251	2,141	2,047	94	96	1,770	277	14	306
Total	90	251	2,141	2,047	94	96	1,770	277	14	306
Non-Government Non-Profit										
Church Related	119	376	1,637	1,356	281	83	727	629	46	427
Non-Profit Corporation	334	1,026	5,008	4,516	492	90	2,573	1,943	43	893
Totals	453	1,402	6,645	5,872	773	88	3,300	2,572	44	1,320
Proprietary										
Individual	-	-	-	-	-	-	-	-	-	-
Partnership	-	-	-	-	-	-	-	-	-	-
Corporation	2	2	25	20	5	80	-	20	100	-
Total	2	2	25	20	5	80	-	20	100	-
Total Interns	545	1,655	8,911	7,939	872	90	5,070	859	36	1,626
			No. of Residencies				No. of Residents on Duty			
Combined Hospital	188	1,250	20,275	19,102	1,173	94	15,131	3,971	21	24,004
Totals	188	1,250	20,275	19,102	1,173	94	15,131	3,971	21	24,004
Non-Governmental Non-Profit										
Church Related	197	474	3,836	3,217	619	84	1,654	1,563	49	4,983
Non-Profit Corporation	672	1,861	16,516	14,983	1,533	91	8,968	6,015	40	20,429
Totals	869	2,335	20,352	18,200	2,152	89	10,622	7,578	42	25,412
Proprietary										
Individual	1	-	-	-	-	-	-	-	-	-
Partnership	3	1	4	1	3	25	1	-	-	4
Corporation	13	8	62	50	12	81	33	17	34	45
Totals	17	9	66	51	15	77	34	17	33	49
Total Residents	1,074	3,594	40,693	37,353	3,340	92	25,787	11,566	31	49,465
Grand Total Interns	1,619	5,249	49,504	45,292	4,212	91	30,857	15,435	32	51,091

Source: Directory of Approved Residencies, AMA, 1976, Excerpted from Appendix Tables IV and V.

It is difficult to distribute a house officer's time between patient care and learning and teaching experiences. The Institute of Medicine in its study on the Costs of Education in the Health Professions (National Academy of Sciences, 1974) developed a methodology for analyzing house officer activities. Time logs were sent to 3400 house officers at teaching hospitals affiliated with nine medical schools. These house officers were requested to record all of their activities and roles on a 24-hour basis for a seven-day week. 13/ They obtained a 40% response rate but from the 1400 respondents were able to approximate how those house officers distributed their time.

This level of detail could not be achieved in the subsequent Institute of Medicine study, Medicare-Medicaid Reimbursement Policies (National Academcy of Sciences, 1976) because of its different focus but such a method is recommended to provide more definitive information on the proper distribution of the costs of graduate medical education. The data that were collected from the sample of 81 teaching hospitals shows that 67% of the house officer's time was spent in patient care activities. (Table V, page 12). From another data source, Table XV shows 87% of the house officer's salary comes from patient revenues. This 20% discrepancy has implications for the education versus service issue in graduate medical education.

In the few instances where medical schools pay house staff salaries, these funds are usually obtained from state appropriations and the school has accepted responsibility for provision of care to the state indigent population as a condition of receiving the appropriation. Even when the hospital and the medical school share the salaries, the hospital pays 75% or more of the salaries. 14/

TABLE XV

Distribution of Funding to Support House Staff,
Excluding Veterans Administration, COTH Hospitals, 1975-76

Source of Funding	Percentage of Dollar Support
Patient Revenue	87%
Federal	2
State & Local Government	5
Medical School	2
Private Foundation	1
Other Hospital	2
Miscellaneous	1
Total	100%

Source: COTH, Association of American Medical Colleges, 1976. p. 24

Even though patient revenues constitute the major source of reimbursement for graduate medical education, no data are available on either the total dollars or the various sources of dollars expended for GME. This applies to all third party payors: private (e.g. Blue Cross), federal and state. We have, therefore, worked with available data to arrive at an approximation of total expenditures for salaries or stipends only.

If we take the average annual salary of private house staff in 1976, $13,000 (Table XII); the number of positions for interns and residents offered in 1975-76 in non-governmental institutions, 51,091 and 90% usually filled (Table XIV); the percentage of support from patient revenues, 87% (Table XV); and the average percentages by sources of patient care revenue in the IOM sample hospitals shown in Table XVI: Medicare 21%, Medicaid 17% and Other Payors 42%, we have the following gross estimates for the contributions to residents' salaries from third party payors in 1976:

Medicare	$136.5M
Medicaid	110.5M
Other Payors	273.1M
Total	$520.1M

This estimate does not include the indirect costs associated with a teaching program such as:

- decreased productivity of teaching physicians in length of time spent on "rounds," ie. seeing patients in hospital accompanied by physicians in training (residents)
- increased costs associated with the volume and nature of ancillary services requested by residents
- costs associated with potential longer lengths of stay of patients cared for by residents due to additional tests, etc.
- costs of subsidized housing, meals, uniforms, health services (usually including families) and additional fringe benefits including professional liability insurance.

Some of these costs are reflected in daily hospital rates for patient care, however. Appendix Table V shows the distribution of these additional costs. There are trade-offs for the teaching hospital and the teaching physician in these additional costs vis a vis the advantages perceived and these are discussed in Section III.

TABLE XVI

Sources of Revenue in Sample Hospitals, FY 1974*

Source of Revenue	Principal State	Principal Local	Principal % Private	Graduate Associated Local	Graduate Associated % Private	Undergraduate Associated % Private	Independent Private
Total Revenues	100	100	100.7	100.3	100	100	100.3
Patient Care	65	74	88.7	63.2	88.0	86.9	90.3
Medicare	14	16	26.7	14.9	29.4	25.6	24.8
Medicaid	14	23	13.1	23.7	8.4	14.6	17.7
Other Payors	37	35	53.9	24.6	50.2	46.7	47.8
State or Local Government appropriations	30	26	0	30	1	1	a/
Medical School Transfer	a/	0	1.2	a/	a/	a/	0
Gifts, Investments, and Endowments	1	b/	4.4	1	7	5	3
Other b/	4	b/	6.4	6	4	7	7

Source: Institute of Medicine field data.

Note: Figures are based on patient care charges before adjustments for such items as bad debts and discounts to staff. The majority of hospitals did not allocate adjustments among payors. Excluded are VA hospitals which are funded wholly by the federal government and children's hospitals which receive Medicare reimbursement for renal dialysis unit costs only. Totals may not add to 100 percent due to rounding.**

a/ Less than 0.5 percent.
b/ Includes revenues from research grants, government contracts, and auxiliary enterprises.

* See Table V for definitions.
** As corrected by Ms. Katherine White, IOM to show how figures were rounded.

An additional point on sources of patient revenue concerns Medicare and the extent of federal tax subsidy. It is not generally recognized that while the financing of Part A (hospitalization) of Medicare comes from the Social Security Trust Fund for payroll taxes, the Part B Trust Fund is financed more by general revenues (16.9%) than by premium payments (9.9%). Therefore, it is a euphemism to consider Medicare in the aggregate as an insurance program.

Table XVII gives the distribution and dollars for sources of funds for Medicare in FY 1975.

TABLE XVII

Sources of Funds for Medicare, Distribution, and Estimated Expenditures, FY 1975*

Source of Funds	Receipts Percent	Estimated Expenditures Amount($000)
Total Medicare	100.0	14,781.4
Payroll Tax (A only)	67.6	9,992.2
Premium payments: (B only)		
Enrollees	9.9	1,463.3
Medicaid	1.3	192.2
General revenues-mostly B	16.9	2,498.1
Interest (both)	4.3	635.6

* Based on the assumption that the distribution of receipts can be equated with the estimated expenditures.

Source: Social Security Bulletin, February 1976, p. 6 and 8.

If, therefore, consideration for subsidization of GME should be couched in terms of revenues for patient care vis a vis some national health insurance plan for primary care, Table XVII demonstrates how far policy makers must go in their considerations.

In summary, this section on patient revenues has brought together some rough approximations of the dollar amounts from third party payors (federal, state, local, private) in support of graduate medical education. It has not presented the total dollar expenditures for physicians in training. Such definitions await future research (Section V) insofar as accompanying costs are concerned. The expenditure for reimbursement to residents for their services does represent a major source of concern both in the escalation of costs to the teaching hospital and the differentiation between educational costs and service reimbursement.

E. Out-of-Pocket Dollars for Graduate Medical Education

The contributions of family and spouse to the support of an individual in GME can only be inferred from similar contributions in undergraduate medical education (Appendix Table II) since no other data are available. The impact of previously incurred loans and obligations in undergraduate medical education does have significance in terms of the provisions of the loans or scholarships in many instances. Appendix Table III outlines the provisions of federal loans and scholarships contained in the new health manpower legislation (P.L. 94-484) and its possible aftermath.

"Moonlighting," working additional hours in the same or a different hospital, is a traditional method used by residents to augment their income. At the Second National House Staff Conference in 1972, 42% of the respondents to a questionnaire stated they supplemented their salaries by "moonlighting." It is also interesting to note that those reporting "moonlighting" also reported salaries above those of other respondents. 15/

The COTH Survey in 1974 also contained questions on "moonlighting." The following tables show the distribution among their constitutent hospitals where "moonlighting" is possible in the in-depth 14 city analyses. These data were skewed by the inclusion of Los Angeles and New York City. 16/

TABLE XVIII

Percentage of Hospitals Where House Officers are Permitted to "Moonlight" in Their Own Hospitals, By Ownership - 1972-73

Ownership	Moonlighting Permitted
State	26%
County	57
City	60
Church	65
Other, Nonprofit	42
VA	19
Average	41%

Source: COTH, Association of American Medical Colleges, 1973.

TABLE XIX

Percentage of Hospitals Where House Officers are Permitted To Moonlight Outside Their Own Hospitals, By Ownership - 1972-73

Ownership	Are Permitted	Not Permitted As Policy	Not Permitted And Enforced	TOTAL
State	41%	38%	21%	100%
County	41	45	14	100
City	0	78	22	100
Church	46	23	31	100
Other, Nonprofit	19	41	40	100
VA	12	16	72	100
Average	25%	35%	40%	100%

Source: COTH, Association of American Medical Colleges, 1973.

No studies are available on the current status on "moonlighting" in view of the increased salary levels since 1972. It can be inferred that residents with the same characteristics as those who augmented their income by "moonlighting" in 1972 will continue to do in 1977. There is no way to estimate the extent of the dollars involved in these transactions nor where they take place. The question of the characteristics of those who "moonlight" is related to the question of collective bargaining discussed in the next section.

Summary of Section II:

This section presented, from a number of sources, the limited amount of data on the financing of graduate medical education by various sources of support, including a gross comparison of the dollars involved. This grossness is confounded by the number of sources and the different years for which data were available. Given all of these caveats, the following is a summary of the figures "massaged" in this section:

1974	Direct Federal Support (Table VIII)	$217.2M
1976	Estimate of direct support in State and Local government hospitals	43.8M
1976	Estimates of indirect support through patient revenues	520.1M
Total approximation for GME from these sources of support		$781.1M

It is obvious in looking at the above approximations that the principal focus for support of graduate medical education is through indirect support from patient care services. The issue remains as to whether this is an appropriate means for financing an educational process.

Section III will present the peripheral data which are available on specialty choice and geographic location. As an adjunct to these data, specifically with regard to specialty choice, and the principal outlay for funds for GME, some trend data will be presented.

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III. GRADUATE MEDICAL EDUCATION SPECIALTY CHOICE, GEOGRAPHIC DISTRIBUTION, SALARY DIFFERENTIAL, AND FUTURE TRENDS

A. Specialty Choice and Geographic Distribution

Table XX exhibits the nearest approximation we have for specialties in GME. It reflects a major increase in Family Practice and Internal Medicine residencies. Though we have no specific data related to the dollar outlays for these two residency programs, the trend should lead to substantial decreases in the cost of GME given the difference, currently, between general specialty and subspecialty residency programs. (Trends on the basis of current status are predicted under C.). 1/

With regard to specialty choice, there are a number of factors which influence the residency positions offered (e.g. federal subsidy and patient care) and the number filled (e.g. prestige, amenities, salary). These have been discussed elsewhere in this paper. There are multiple data sources for the geographic of residencies by census region and state from the Directory of Residencies of the AMA, 1976. The 65,357 positions offered for 1975-76 do not include the approximately 2500 free standing internships still available. The percentages of residencies filled show the lowest numbers to be in the West North Central, East South Central and West South Central census areas, even though these were in the 85-87% range. 2/

The COTH Study shows the distribution of house staff salaries among 14 cities in 1974. (Table XXII) This table reflects the additional increase in salary (stipends) generated by advanced residency training. In all of the cities cited, there is an increase of support between years 3 and 6 with Los Angeles having the greatest and Dallas the least. This also reflects the additional costs associated with subspecialty training after years two or three. 3/

TABLE XX

PERCENT CHANGE IN THE NUMBER OF RESIDENCY AND TOTAL TRAINING POSITIONS BETWEEN 1970 AND 1974 BY SPECIALTY

Specialty	Residency positions 1970	1974	Percent Change	Total positions 1970	1974	Percent Change
Total	23,865	37,343	+56	35,340	54,130	+53
Contact Specialties	6,037	12,065	+99	10,800	19,965	+85
Family practice	135	1,545	+1,044	267	1,795	+572
General practice	116	203	+75	208	323	+55
Internal medicine	4,179	7,583	+81	7,725	13,559	+76
Pediatrics	1,607	2,734	+70	2,600	4,288	+65
Medical specialties	1,141	2,039	+79	2,350	4,026	+71
Medical subspecialties	168	405	+141	990	1,801	+82
Pediatric subspecialties	67	124	+85	288	517	+80
Nuclear medicine	10	65	+550	20	71	+225
Other medical specialties	896	1,445	+61	1,052	1,637	+56
Surgical specialties	9,648	13,641	+41	11,598	16,611	+43
General surgery	3,932	5,503	+40	5,111	7,312	+43
Obstetrics and gynecology	1,701	2,454	+44	2,084	2,981	+43
Surgical subspecialties	4,015	5,684	+42	4,403	6,318	+43
Other specialties	7,039	9,598	+36	7,949	10,953	+38
Anesthesiology	1,033	1,521	+47	1,165	1,764	+51
Pathology	1,555	2,005	+29	1,884	2,377	+26
Physical med. & rehab.	159	301	+89	176	323	+84
Psychiatry	2,473	3,346	+35	2,750	3,815	+39
Radiology	1,819	2,425	+33	1,974	2,674	+38
Rotating internship				2,643	2,575	-3

Source: Institute of Medicine National Survey Questionnaire.

TABLE XXI

Number of Residencies BY Census Region and State

Census Division Region, and State	No. of Hospitals	No. of Approved Programs	Number of Residencies: Total Positions Offered Sept. 1, 1973	Number of Residencies: Total Positions Filled Sept. 1, 1973	Number of Residencies: Positions vacant Sept. 1, 1973	Number of Residencies: Percentage Filled	Number of Residents on Duty: Graduates US Canada Sept. 1, 1973	Number of Residents on Duty: Foreign Graduates Sept. 1, 1973	Number of Residents on Duty: Percentage For. Grads. in Filled Positions	Total Residency Positions Offered 1975-1976
NORTHEAST										
New England										
Connecticut	33	94	1,036	996	40	96	558	438	44	1,242
Maine	8	12	66	54	12	82	47	7	13	98
Massachusetts	83	176	2,205	2,140	65	97	1,533	547	26	2,497
New Hampshire	4	15	121	112	9	93	104	8	7	169
Rhode Island	12	23	227	200	27	88	100	100	50	329
Vermont	2	14	114	111	3	97	105	6	5	128
Totals	142	334	3,769	3,613	156	96	2,507	1,106	31	4,463
MIDDLE ATLANTIC										
New Jersey	53	134	1,111	1,030	81	93	242	788	77	1,588
New York	201	733	9,043	8,661	382	96	4,139	4,522	52	10,482
Pennsylvania	107	374	3,488	3,086	402	88	2,165	921	30	4,296
Totals	361	1,241	13,642	12,777	865	94	6,546	6,231	49	16,366
NORTH CENTRAL										
East North Central										
Illinois	74	272	3,097	2,933	164	95	1,527	1,406	48	3,730
Indiana	24	50	608	496	112	82	418	78	16	709
Michigan	72	215	2,320	2,091	229	90	1,174	917	44	2,998
Ohio	83	302	2,748	2,464	284	90	1,447	1,017	41	3,274
Wisconsin	27	81	852	730	122	86	554	176	24	1,003
Totals	280	920	9,625	8,714	911	91	5,120	3,594	41	11,714
WEST NORTH CENTRAL										
Iowa	17	34	500	418	82	84	356	62	15	532
Kansas	17	37	469	378	91	81	309	69	18	563
Minnesota	26	71	1,328	1,240	88	93	1,040	200	16	1,688
Missouri	45	120	1,502	1,302	200	87	912	390	30	1,810
Nebraska	16	30	338	287	51	85	257	30	10	421
North Dakota	7	4	9	6	3	67	5	1	17	13
South Dakota	6	4	27	17	10	63	14	3	18	26
Totals	134	300	4,173	3,648	525	87	2,893	755	21	5,053

TABLE XXI (CONTINUED)

Census Division Region, and State	No. of Hospitals	No. of Approved Programs	Number of Residencies: Total Positions Offered Sept. 1, 1973	Number of Residencies: Total Positions Filled Sept. 1, 1973	Number of Residencies: Positions vacant Sept. 1, 1973	Percentage Filled	Number of Residents on Duty: Graduates US Canada Sept. 1, 1973	Number of Residents on Duty: Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in Filled Positions	Total Residency Positions Offered 1975-1976
SOUTH										
South Atlantic										
Delaware	4	11	103	87	16	84	49	38	44	119
District of Columbia	25	106	1,355	1,268	87	94	964	304	24	1,551
Florida	36	118	1,296	1,202	94	93	913	289	24	1,607
Georgia	24	69	783	636	147	81	542	94	15	971
Maryland	37	134	1,436	1,339	97	93	852	487	36	1,710
North Carolina	25	88	1,022	907	115	89	817	90	10	1,183
South Carolina	10	74	394	324	70	82	283	41	13	540
Virginia	37	97	1,002	898	104	90	733	165	18	1,208
West Virginia	13	34	279	211	68	76	120	91	43	359
Totals	211	731	7,670	6,872	798	90	5,273	1,599	23	9,248
EAST SOUTH CENTRAL										
Alabama	21	45	442	360	82	81	306	54	15	578
Kentucky	24	50	558	481	77	86	354	127	26	698
Mississippi	10	21	248	200	48	81	189	11	6	323
Tennessee	32	86	968	834	134	86	689	145	17	1,169
Totals	87	202	2,216	1,875	341	85	1,538	337	18	2,768
WEST SOUTH CENTRAL										
Arkansas	8	18	234	200	34	85	193	7	4	276
Louisiana	29	80	800	660	140	83	543	117	18	1,060
Oklahoma	19	50	362	304	58	84	272	32	11	492
Texas	65	204	2,440	2,137	303	88	1,800	337	16	3,015
Totals	121	352	3,836	3,301	535	86	2,808	493	15	4,843
WEST										
Mountain										
Arizona	21	39	392	357	35	91	284	73	20	580
Colorado	20	63	771	718	53	93	687	31	4	939
Nevada	1	1	4	1	3	25	---	1	100	4
New Mexico	9	17	185	181	4	98	171	10	6	185
Utah	12	32	305	302	3	99	287	15	5	381
Totals	63	152	1,657	1,559	98	94	1,429	130	8	2,083

TABLE XXI (CONTINUED)

Census Division Region, and State	No. of Hospitals	No. of Approved Programs	Number of Residencies: Total Positions Offered Sept. 1, 1973	Total Positions Filled Sept. 1, 1973	Positions Vacant Sept. 1, 1973	Percentage Filled	Number of Residents on Duty: Graduates US Canada Sept. 1, 1973	Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in Filled Positions	Total Residency Position Offered 1975-1975
PACIFIC										
Alaska	1	---	---	---	---	--	---	---	--	---
California	123	449	5,384	4,949	435	92	4,645	304	6	6,691
Hawaii	12	20	170	163	7	96	129	34	21	237
Oregon	9	38	375	355	20	95	324	31	9	470
Washington	17	52	628	588	40	94	549	39	7	741
Totals	161	559	6,557	6,055	502	92	5,647	408	7	8,139
POSSESSIONS										
Territories & Possessions										
Canal Zone	1	8	35	30	5	86	15	15	50	59
Puerto Rico	15	41	508	425	83	84	185	240	56	615
Totals	16	49	543	455	88	84	200	255	56	674
Grand Totals	1,577	4,840	53,688	48,869	4,019	91	33,961	14,908	31	65,357

Source: Directory of Residencies, AMA, 1976

TABLE XXII

COTH SURVEY OF HOUSE STAFF POLICY, 1974
PART II
ANALYSIS OF FOURTEEN CITIES
Average Stipends
1974-75

CITIES	Year of Post-MD Training 1	2	3	4	5	6	Clinical Fellows 1	2
	$	$	$	$	$	$	$	$
New York City	13,500	14,700	16,000	16,400	17,000	17,500	17,202	17,000
Los Angeles	10,800	13,656	14,784	15,936	17,052	18,216	*	*
Pittsburgh	11,225	11,935	12,960	14,000	14,975	16,450	*	*
Providence	11,158	11,859	12,680	13,624	14,185	15,612	-	-
Boston	11,375	11,760	12,495	13,000	14,700	15,900	-	-
Chicago	11,011	11,727	12,420	13,180	13,450	14,395	12,900	13,500
Washington, D.C.	10,568	11,742	12,329	12,916	13,503	*	*	*
Baltimore	11,050	11,675	12,300	13,110	13,800	14,350	*	*
Philadelphia	10,600	11,600	12,300	12,900	13,500	14,538	12,618	*
San Francisco	10,517	11,400	12,150	12,900	13,800	15,425	*	*
Cleveland	11,000	11,500	12,000	12,500	13,000	13,553	*	*
Minneapolis	9,800	10,272	10,772	11,700	*	*	-	-
Houston	9,540	10,140	10,740	11,340	11,940	12,540	*	*
Dallas	9,276	9,735	10,190	10,550	11,000	11,200	10,800	11,400

* The number of hospitals which reported from this city was below the accepted minimum standard for analysis and is omitted.

Stipends for second year fellows averaged less than first year fellows due to discontinuance of some of the higher paying fellowships for the second year.

B. Factors affecting Salary Patterns and Differentials

Various medical and lay journals have reported house staff gains in improved salaries, fringe benefits, working conditions, patient care and training programs. Essentially three approaches have been used to attain these gains: (1) discussions with administrators on the need for improvements; (2) direct contract negotiations using collective bargaining or arbitration; and (3) so called job-actions to dramatize demands.

The 1975 survey done by COTH contained questions on collective bargaining. Table XXIII shows that the hospitals most likely to have a house staff association among various categories were city or county institutions. These types of hospitals also were most likely to have a negotiated agreement. Among house staff many associations were most likely also to be in the institutions which were unaffiliated hospitals. Higher paying hospitals, were most likely to have a house staff association, and to have a negotiated contract in force as well as requests for collective bargaining recognition.[4/]

Appendix Table VIII lists those states now having collective bargaining underway.

The implications of collective bargaining on the direct support of graduate medical education are just emerging. The impact of increases in salaries and fringe benefits for residents, long the hospital's source of nominal-cost inpatient care, cannot be estimated. In October 1976 the New York State Courts overturned a decision by the National Labor Relations Board that declared residents were students and not employees. The case is now in litigation.

TABLE XXIII

House Staff Collective Negotiations

Ownership	Existence of Functioning House Staff Association Which Has A Written, Collectively Negotiated Bargaining Agreement	Formally Requested Collective Bargaining Recognition	Not Formally Requested Collective Bargaining Agreement	No Functioning House Staff Association	Total
State	9%	13%	59%	19%	100%
County	33	13	47	7	100
City	33	11	56	0	100
Church	6	6	67	21	100
Other, Nonprofit	11	10	50	29	100
VA	9	4	29	58	100
Affiliation					
University-Owned	12%	15%	50%	23%	100%
Major	12	10	48	30	100
Limited	7	3	49	41	100
Unaffiliated	20	5	75	0	100
Aggregate	12%	9%	50%	29%	100%

Source: COTH Survey of House Staff Policy. 1975. p. 59.

C. Future Trends in the Costs of Graduate Medical Education

It seems appropriate for the purposes of this paper to attempt some prediction of the potential future direct costs of GME based on current costs and estimated future supply. In arriving at these figures we have made several assumptions:

- That the number of medical school graduates will increase at the expected rate.
- That the percentage change to primary care residency positions in teaching hospitals mandated by P.L. 94-484 will take place.
- That the current reimbursement for residents has not reached a level approaching the maximum ability of hospitals to pay and future increases will be based on annual inflationary trends, for this purpose 8.5%.
- That no new method of reimbursement is introduced during this period.

Data have been pulled together from various sources and "massaged" to arrive at these estimates.

To approach the impact of P.L. 94-484 with its emphasis on primary care residencies (family medicine, general internal medicine, and general pediatrics), which are ordinarily three year programs, only in terms of salaries, we first used the salaries from the 14 city survey done by COTH (Table XXII, p.46) and selected Baltimore as a median. Averaging the first three years' salaries, we arrived at $11,675 while those residencies requiring up to six years, which were judged to be other than primary care, averaged $12,714.

The trend data shown in Table XXIV[5/] based on residents by specialty in 1970 were adjusted for information acquired in 1972 regarding percent of change in specialty choice. The trends were further adjusted to reflect the current manpower legislation (P.L. 94-484) insofar as kinds of residents are concerned, that is 50% in primary care positions after 1980. Given these manipulations of the data, we have the following projections for numbers of residents and salary costs using an 8.5% inflationary rate:

Total Residents 1971, 1980, 1990

Specialty	1971 (Actual)		1980 (Est.)		1990 (Est.)	
	No.	Pct.	No.	Pct.	No.	Pct.
Primary Care	11,570	27.5	29,272	46	44,565	50
Other	30,447	72.5	34,362	54	44,565	50
Total	42,017	100.0	63,634	100	89,130	100

Source:
1971-"Supply of Health Manpower," Table 33, p. 65 (excludes 246 residents in general practice, less than 1 percent of total).

1980 and 1990-Total estimated by using projected changes in active physicians in respective specialties between 1970 and 1990 as shown in "Supply of Health Manpower" Table 40a, totals allocated to "Primary Care: and "Other" using percentages shown, which reflect newly enacted residency requirements.

TABLE XXIV

Supply of Active Physicians (M.D.), By Specialty: Actual 1970; Projected 1980 and 1990

Specialty	No. Of Physicians(M.D.) 1970	1980	1990	Percent Distribution 1970	1980	1990
Total active physicians	311,210	430,240	571,030	100.0	100.0	100.0
General practice 1/	56,260	47,140	36,510	18.1	11.1	6.4
Medical specialties	66,380	116,010	174,960	21.3	27.0	30.6
Dermatology	4,000	5,610	7,620	1.3	1.3	1.3
Family practice	1,690	6,610	12,630	0.5	1.5	2.2
Internal medicine	41,870	71,650	106,880	13.5	16.7	18.7
Pediatrics 2/	18,820	32,150	47,830	6.0	7.5	8.4
Surgical specialties	85,380	128,970	180,810	27.4	30.0	31.7
General surgery	29,760	52,450	78,890	9.6	12.2	13.8
Neurological surgery	2,580	3,440	4,500	0.8	0.8	0.8
Obstetrics and gynecology	18,880	26,110	34,590	6.1	6.1	6.1
Ophthalmology	9,930	12,920	16,730	3.2	3.0	2.9
Orthopedic surgery	9,620	13,350	18,030	3.1	3.1	3.2
Otolaryngology	5,410	6,800	8,520	1.7	1.6	1.5
Plastic surgery	1,600	2,860	4,360	0.5	0.7	0.8
Thoracic surgery	1,810	3,020	4,430	0.6	0.7	0.8
Urology	5,800	8,030	10,740	1.9	1.9	1.9
Other specialties	103,190	138,120	178,760	33.2	32.1	31.3
Anesthesiology	10,860	17,360	24,560	3.5	4.0	4.3
Child psychiatry	2,100	4,270	6,870	0.7	1.0	1.2
Neurology	3,070	6,500	10,580	1.0	1.5	1.9
Psychiatry	21,150	32,780	46,550	6.8	7.6	8.2
Pathology	10,280	16,770	24,000	3.3	3.9	4.2
Physical medicine	1,480	2,550	3,720	0.5	0.6	0.7
Radiology	10,520	14,740	19,730	3.4	3.4	3.5
Therapeutic radiology	870	1,760	2,790	0.3	0.4	0.5
Miscellaneous	42,860	41,400	39,960	13.8	9.6	7.0

1/ Excludes 1,690 diplomates in family practice who have been shown separately.
2/ Includes pediatric allergy and pediatric cardiology.

Source: Projections developed by RAS, BHRD, HRA, (April, 1974). These projections update earlier projections for medical specialties developed by RAS. See text of this report for explanation.

Note: Figures may not add to totals and subtotals due to independent rounding.

Annual Salary Projections, Per Resident

	Primary Care	Other
1974 (average)	$11,675	$12,714
1980 (estimated)	19,042	20,737
1990 (estimated)	43,045	45,877

Estimates assume annual increase of 8.5 percent.

Projection of Total Number of Residents and Total Annual Salary Costs

	1980			1990		
	No.	Salary	Total $(000)	No.	Salary	Total $(000)
Primary	29,272	$19,042	$567,397	44,565	$49,045	1,913,300
Other	34,362	20,737	712,648	44,565	46,877	2,084,386
Total	63,654	--	$1,270,045	89,130	--	$4,002,686

Such a prospect, four billion dollars, gives added impetus to new approaches for the financing of graduate medical education.

Section III has focused primarily on the issues surrounding specialty choice and, to some extent, geographical distribution as they apply to the financing and reimbursement of medical education. At this point there is no way to predict the impact of collective bargaining in one form or another on the ability of teaching hospitals, and the public through third party payments, to support graduate medical education. If the status quo is maintained, and only increased numbers and inflationary trends are considered outlays for salaries for residents could approach four billion dollars by 1990.

Section IV discussed the objectives of teaching hospitals and individual physicians in training in the context of society's objectives in graduate medical education and presents alternative funding options as well as current issues which would have an impact on the future of the financing of graduate medical education.

References
Section III

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IV. OBJECTIVES, OPTIONS, AND ISSUES

A. Introduction

The previous sections presented, insofar as possible, data available on past and present financing and reimbursement of graduate medical education. This section is directed toward issues and options for the future.

In a discussion of issues and options regarding the financing of graduate medical education, the underlying objectives of principal actors must be kept in mind. These actors are society, teaching hospitals, and the physicians in training. The general or societal objectives must be considered in evaluating potential alternative financing schemes for GME. The incentives and objectives of the teaching hospitals and the physicians in training must be considered if the societal objectives are to be met. Medical schools are evolving as a fourth actor through their affiliated teaching hospitals, not only with the sharing of many educational activities but also with undergraduate subsidies being related to graduate programs.

After defining these objectives and some of the characteristics of teaching hospitals and physicians in training which have a bearing on these objectives, financing issues and options will be discussed:

- Who should pay for graduate medical education?
- What mechanism(s) should be used?
- What are some of the advantages and disadvantages associated with these alternatives?
- What are the possible effects of a national health insurance system?
- What impact might increased unionization have on teaching hospital costs in general and, more specifically, on the costs and financing of teaching activities?
- Will a sharp reduction in the number of foreign medical school graduates affect teaching program costs or financing?

B. Objectives of Graduate Medical Education

Societal Objectives

The general or societal objective of graduate medical education is, of course, the training of qualified physicians to deliver medical care and it is taken as a given that accredited programs achieve this goal.

From the point of view of public policy, however, there are several additional dimensions. One is specialty distribution. This has come to mean increased numbers of physicians in primary care specialties, fewer physicians in surgical specialties, and at least no increases in other specialties. Another dimension is equity of access to physician services both geographically and holistically in terms of personal costs to secure them. This objective has implications for graduate medical education in the quantity of services provided by physicians in training at teaching hospitals and the influence that the location of residency training has on future practice location.

A third dimension has emerged regarding cost containment. Incentives and constraints should be chosen so that the products of graduate medical education meet needs at least cost. The objective now is to produce the "right number of physicians of the right kind" and not as many physicians as possible.

Teaching Hospital Objectives

The dominant objective of the teaching hospital is patient care. Physician training and, to varying degrees, medical research are also objectives of the institution. These are largely jointly produced activities which means that the process of caring for patients is inextricably bound with teaching and research. Finally, hospital decisions are constrained by limited budgets and their form of control.

There are a number of characteristics which influence the achievement of these objectives. First, almost all teaching hospitals are non-proprietary, which means that one cannot impose the analytically convenient assumption used by economists that the hospital's objective is to maximize profits. Reality argues that the hospital's objectives include factors such as quality, size, prestige or institutional reputation, and, to the extent necessary, net revenues to attain these other objectives. While this provides a better description of reality, it is extremely intractable because of the unknown nature of the relative importance of trade-offs among the multiple objectives. How these factors vary from hospital to hospital will affect the hospital's response to alternative financing systems.

The problem of multiple objectives is further complicated by multiple decision makers. The objectives of administrators, service chiefs, trustees, and medical school deans may frequently diverge or be inconsistent, even if all agree on the hospital's overall goals. For example, administrator's may wish to minimize expenses while service chiefs desire to expand the size or technology of their services with little regard to other costs or revenues.

From the joint product nature of the hospital's outputs (patient care, teaching, research) it follows that these objectives must be subject to budget constraints and their composition, i.e. the mix of revenue sources which, in turn, affect hospital decisions and responses. Two things should be noted about such constraints. They may be shifted because of proportionate changes in all of the revenue sources, or the relative contributions of different sources may change. For example, at the present time hospitals are reimbursed principally on a full cost basis for in-patient care, but not for out-patient services. Changing these reimbursement rules would have an impact on the hospital's emphasis in patient care activities. However, altering relative reimbursement rates will also affect the size of the total budget, which in turn affects the production of other outputs within the hospital.

As noted in Section II, the rapid growth in the number of residency positions offered by teaching hospitals coincided with the growth of cost reimbursed third party payments under Medicare and Medicaid. To the extent that the presence of residents in a hospital attracts attending physicians and/or permits the hospital to impose higher charges, then the maintenance of a teaching program can contribute to all of a hospital's objectives: improving quality, increasing size, adding to prestige, and possibly increasing net revenues. This points out the difference between graduate medical education and other kinds of graduate education.

The teaching process is a source of gratification to all teachers and the number of students which an individual teacher may have is used as an indication of his or her status. Teachers in graduate medical education have both of these but they, and the institutions in which they teach, must also tolerate less productivity, longer lengths of stay by patients, and increased utilization of ancillary services in hospitals inherent in the teaching process. Moreover, third party payment has allowed teachers to meet their objectives and the teaching hospitals to maintain net revenues while meeting other objectives.

In summary, the teaching hospital is a complex institution with multiple goals and multiple decision makers. Hospital response to alternative financing systems likely depends on both the source of revenues and the costs of producing the hospital's joint outputs - patient care, teaching, and research. As costs approach revenues, teaching hospitals may well re-evaluate their objectives and the extent to which they are dependent on graduate medical education, for both patient care and prestige.

Objectives of Medical Students and Residents

It has been argued that the choice of an occupation and/or a location depends on the expected financial and non-financial costs and returns over some relevant planning period. The importance of non-financial factors - prestige, intellectual challenge, quality of life - lies in the fact that an individual may be willing to trade financial returns for more desirable non-financial returns. However, the choice will be inversely related to the costs of making it. In the case of specialities,

for exaple, this includes the length of training and costs incurred while in training. For location choices, important costs might be moving and travel expenses or separation from family and friends.

It has also been argued that because physicians can reasonably expect to earn substantial incomes regardless of their specialty and location choices, their decisions may not be sensitive to financial factors. Studies have shown that physician income has little effect on distribution 1/ suggesting again, as with teaching hospitals, the breakdown of traditional market forces. Physicians are able to locate in desirable areas without having to sacrifice satisfactorily high incomes in return.

The characteristics of physicians in training have been examined in order to identify factors related to these non-financial objectives. Socio-demographic characteristics such as marital status, type of home community, personality, undergraduate medical education, and, to a limited extent, graduate medical education have been examined. Present analytic techniques do not make their results useful for specific policy formulation. The major conclusion is that non-financial factors, i.e. the backgrounds and preferences of students and the nature of the medical education to which they are exposed, have a major effect on specialty choice. The exact magnitude of these influences is not well specified. On the other hand, undergraduate medical education, birth, and premedical school residence, and the combination of these with the location of graduate medical education significantly affect location choice. (Appendix Table IX)

Of policy interest is that having participated in a rural preceptorship program has not been found to be significant in location choice. Factors which <u>have</u> been found to be significant include area amenities, per capita income of the area, net population migration, presence of medical facilities, recreational opportunities, and coastal proximity.

In summary, within the context of an acceptable income level as a given objective, individual physicians in training select those specialties and eventual practice site locations which best meet their non-financial objectives, e.g. collegial relationships, amenities in quality of life, and personality characteristics. Any effort to redistribute physicians must take these into consideration.

C. Financing Options and Issues

Having defined some of the objectives of teaching hospitals and individual physicians in training which must be considered in looking at the financing of graduate medical education, we will first explore issues and options surrounding:

- Who should pay for graduate medical education?
- What mechanism(s) should be used?
- What are the advantages and disadvantages associated with these alternatives?

The question of who should pay for something, either goods or services, usually depends on who benefits from obtaining, using, or owning the particular goods or services and whether an efficient mechansim exists for making the implied payment. In graduate medical education, as noted under Objectives, several distinct parties are involved - residents, teaching hospitals, medical schools, patients, and local, state and federal governments. (Estimates of the relative direct and indirect contributions of these parties to financing GME in the past were given in Section II.) The most confounding factor is the joint product nature of residency training which includes both education and provision of services.

A first consideration should be the transaction between the resident and the teaching hospital. According to the theory of human capital, 2/the relative shares of training expenses will depend on how transferrable that training is to other institutions or activities. The more specific the training to the hospital which provides it, the greater the share of training costs which the hospital will be willing to absorb. Conversely, if the training is highly transferrable, as in the case of medicine, the greater the share that should be borne by the trainee.

There are also variations in the quality and quantity of training and services provided across hospitals, locations, and specialties which further complicate any attempt to fix the relative financial shares of trainees and hospitals through legislative or regulatory mechanisms. It may be that one goal of policy should be to facilitate negotiation between residents and hospitals with regard to stipends (salaries), working conditions, program structure, etc. Residents should be able to determine the work of the training they receive, and hospitals the value of the services provided. In this context, the unionization of residents may help move the bargaining process along. The impact of such bargaining remains to be seen however. (This is discussed in greater detail later in this paper.)

The implications of these negotiations lead to the question of whether patients should pay for graduate medical education. This translates into teaching hospitals imposing higher charges for patient care in order to recover teaching costs from third parties. To the extent that the presence of a teaching program improves the quality of care, then higher charges/costs may seem acceptable as long as patients are willing to pay the additional increment. Disregarding the quality of care issue, this last consideration loses much of its meaning in the presence of extensive insurance coverage. This coverage is usually arranged by agents supposedly representing populations of potential patients, e.g. union negotiators, the Congress of the United States. Until recently, the bite of ever increasing insurance premiums has not been disputed by the public.

Germane to this issue is the change in emphasis in societal objectives from "training physicians" to "training physicians of the right kind in the right numbers", i.e. primary care physicians. The teaching hospital at the present time is geared to delivery secondary and tertiary care, that is, short or long term care for patients with complicated illnesses. It may be that a change of location for training physicians may be as important as a change in reimbursement rates for ambulatory care in teaching hospitals. The growing success of the National Health Services Corps (NHSC) in attracting and retaining physicians is encouraging. The indicated importance of continuing access to colleagues as an influence in choice of practice location suggests that the development of the Area Health Education Center (AHEC) should be nurtured. In general, it seems that policy addressing inadequate access to medical care in rural areas might best be focused on "new models" such as the NHSC and AHEC rather than relying on the previous organizational structure.

Finally, is there justification for public financing of GME and if so, what levels of government - federal, state, and/or local should be involved? Arguments for public support have been based on the assumption that GME is part of the public educational system and should be financed as such.

To the extent that there is public support for GME, how should this support be distributed? Adminisrative considerations aside a fairly strong argument can be made that the federal government should be the principal underwriter of educational subsidies, as distinct from subsidizing the medical care provided by residents. The relatively high mobility rate of new physicians suggests that certain states would be unable to recoup the value of the subsidies provided. That is, the ability of some states to retain physicians after they have completed training is inversely related to both those states' need for physicians and their capacity to subsidize training.

State and local governments, however, may still wish to contribute to the financing of medical education. Legitimate reasons for doing so would be to increase the availability and/or quality of medical care services and to improve the opportunities of local residents to become physicians. The latter has become a "lose if we do, lose if we don't proposition" for state and local governments in subsidizing local residents in medical education. As noted in Section II, there is some correlation between retention of physicians and place of residence/medical education; however, the mobility question stated above with respect to certain states remains.

In summary, the question of who should pay for graduate medical education revolves around the issues of insurance mechanisms which mask and absorb the differences between education and patient care in teaching hospitals; the extent to which the individual trainee is willing to rationalize the benefits of his or her training versus long term gains and assume some financial responsibility for this training; and whether, if educational costs can be separated from service delivery, the federal government should subsidize these costs.

What are some of the options in the financing of graduate medical education?

The options will be grouped in terms of whether their direct impact is on individual or institutional budgets. A set of individual financing options will be discussed first, followed by institutional financial alternatives. This type of distinction is somewhat artificial since transactions between hospitals and residents will have secondary effects on both sets of budgets. It is also obvious that the options are not mutually exclusive and could be applied in various combinations.

Individual Financing Options

Three types of financing mechanisms will be discussed: (1) self-financing with the provision of loans, scholarships, and loan forgiveness options; (2) direct reimbursement of residents for the medical care services they provide; and (3) granting of some type of start-up capital or guaranteed minimum income for entering a designated location and/or specialty after completion of training.

(1) Self-financing through loans, scholarships, and/or loan forgiveness.

To place this alternative in context, let us assume that all public grants to institutions for teaching/education of medical students and residents were terminated. (Grants and support for patient care and research would be continued but at levels which do not allow spill-over to education.) In all probability, institutions would respond by increasing tuitions to the so-called full-cost level for medical students and in the case of residents, this might be translated into a reduction in stipends (salaries). In place of institutional support, there would be some type of loan bank established with the following features:

- loans would be financed by the federal government or through third parties with the federal government insuring repayment, depending on which approach is administratively less costly. Federal guarantee is important in order to encourage loans to higher risk students, particularly those from low income families.

- rates would be set in accordance with current long term interest rates plus premiums for administration and risk-taking. Risk, in this case, is the probability of the applicant failing to complete the medical education curriculum successfully or defaulting on the loan.

- loans would be sufficiently large to cover tuition in medical school plus living expenses over the entire medical education process. Given the generally high expected return in medical education, i.e. graduates utilize the skills they have learned, there is no reason to believe that such loans should not be set at full cost according to locality and type of training.

- physicians agreeing to practice designated specialties, locate in specified areas, and/or serve defined populations for a circumscribed period of time would have loans "forgiven" according to previously agreed upon terms. These terms might include specific agreements for these service commitments prior to receipt of assistance . The terms of such "forgiveness" should be changed as national needs change over time, as should specialty, area, and population designations. Given the lack of reliable evidence on the effectiveness of such programs, initial terms would need to be set arbitrarily with the flexibility to alter them as the program continues.

- Since forgiveness is likely to be most appealing to physicians in training with potentially larger financial burdens, e.g. those from low income families, there should be a provision for outright grants based on need. The size of these grants should be chosen to equal, approximately, the relative financial burden across physicians in training from different segments of income distribution.

- Forgiven loans would be financed from general revenues or long term debt. That portion of the system involving physicians who choose to repay their loans would be set up as a revolving fund which would, therefore, be self-financing.

There are a number of variations on a self-financing approach. One is the so-called "income contingent repayment plan" or the "educational opportunity bank." 3/ Other plans vary limits on maximum loans, eligibility, or the mix of scholarship and grants. Regardless of the specific details, these plans share the common strategy of altering relative rates of return to the participant primarily by increasing the costs of making undesirable choices insofar as the program's objectives are concerned.

Cost of such a program would depend first on the size of the loan forgiveness for each physician making a desired choice e.g. designated specialties, and second on the number of additional physicians induced by the program to make desired choices, over and above those who would have made these choices without loan forgiveness. Cost for each additional trainee will depend on the amount of loan forgiveness required to change their decisions. In general, the amount of the loan forgiven for each year would have to be at least enough to compensate for differences between say, urban and rural practices in terms of both psychic returns and after tax (and loan repayment) incomes. Evidence on the responsiveness of specialty and location decisions to financial decisions and on the success of existing loan forgiveness programs (which involved very small debts indicates that the financial incentive may have to be quite large 4/

(2) Direct fee-for-service reimbursement of residents

The principal objectives of reimbursing residents directly for service provided are : (1) residents' stipends would no longer be counted as hospital costs and presumably would not be reimbursed on a reasonable cost basis. (This, however, does not resolve the issue of whether hospitals should be reimbursed for teaching expenses incurred as part of a residency program.); (2) direct compensation would better approximate the value of residents' contributions to care and would also reduce the opportunity costs borne by residents, assuming that they are currently undervalued by hospitals; and (3) residents' reimbursement rates could be manipulated so as alter relative rates of return to training, and presumably practicing, in designated specialties and/or locations.

In practice, however, this reimbursement mechanism would be extremely difficult to work out. The first and most obvious problem is the kinds of services for which residents would be reimbursed: only those where the resident is the independent provider or also those provided under direct supervision of a teacher. Would the resident submit a separate bill for each patient seen on rounds? Most importantly, the hospitals and attending physicians would still be responsible for ancillary costs in time and services incurred by the teaching program. This would be no change from the current system, since hospitals are reimbursed on a full cost basis for almost all resident generated services. Finally, at what rates would residents be reimbursed?

Given these administrative problems, it is probably not an historical accident that residents have been reimbursed on a flat salary basis by hospitals. However, elimination of the internship and the identification of residency training with choice of a specialty may make it feasible to consider variations in stipends by specialty. In effect, hospitals currently face such variations because not all services are reimbursed on a full cost basis. Given that stipends tend to be similar for all specialties, this implies that the net cost to a hospital is higher for those specialties reimbursed at less than full cost. It has been argues that prior to direct Federal support of family practice residencies, hospitals were reluctant to provide training for ambulatory care specialties precisely because of the lower rate of reimbursement.

(3) Direct subsidies for establishing practices in certain areas and/or special specialties.

This type of mechanism is primarily aimed at specialty and location maldistribution, rather than at financing medical education *per se*. As with loan forgiveness, its effectiveness as a redistribution mechanism would depend on the sensitivity of physicians' choices to this type of incentive and on the size of the subsidy required to bring about a desired change.

Administration of this program would involve monitoring effort, defining and identifying specialty choice, and determining the size of the subsidy and how long it should be granted. Unlike the first two financing schemes, there is a strong argument for significant local cost sharing in the case of subsidized practices or guaranteed minimum income. This is similar to

the model used by the National Health Services Corps in designated communities. The costs of setting up a primary care practice (equipment, record keeping system, etc.) are subsidized and a minimum income guaranteed the physician until the practice is self-sustaining. In many practices, the community will share the costs by paying the salary of the nurse during this period.

Institutional Financing Options

The simple effect of making educational grants to institutions has traditionally been that it reduces the cost of education to the student, and thereby increases both the number of students seeking training and the number of training places offered. This use of tax monies has been justified on the grounds that public benefits exceed private benefits and that without the subsidy, a less than optimal quantity of graduates would be produced.

To this justification has been added the presumption that medical schools and teaching hospitals can influence the specialty and location choices of their graduates. If physicians' choices are in fact relatively insensitive to future financial factors, then this may be a more efficient method of affecting distribution choices.

At least three types of grants are possible:

(1) block grants contingent upon reaching targets for particular specialty and location choices;

(2) capitation payments per student (graduate) choosing a designated area and/or specialty;

(3) categorical grants for establishing specific programs to influence specialty and location choices.

Block grants

Desirable targets may be set either uniformly for all schools or teaching hospitals, individually for each, or by groups or categories of institutions. The choice of a specific method or approach to influence specialty and location decisions would be left to the individual medical school or hospital. In essence, this is the strategy of the Health Professions Educational Assistance Act of 1976 (P.L. 94-484), which prescribes a national goal in terms of the proportion of residents training in primary contact specialties. If the national target is satisfied, then individual schools or hospitals may deviate from the desired averages.

Given the heterogeneity of medical education institutions, this approach allows flexibility. How an institution goes about attaining its exogenously determined objective would depend on how consistent the goal is with its preexisting objectives and on how costly it would be to move to the designated proportion of primary contact residency positions. Institutions which already satisfy the targets in these positions would in effect receive a lump sum bonus. Other institutions may consider the cost of

attaining the target too high relative to the size of the grant. Penalties for failing to attain distributional targets, e.g., withdrawing other federal funds, would seem to be highly inefficient, since the original justifications for making those expenditures would presumably still be in force.

The administrative aspect of this type of financing may be extremely complex. The main problem, it seems, is to hold the institution financially responsible (either positively or negatively) for a decision which is ultimately made by the individual. Specific problems, for example, might be to determine how long after graduation the decision to enter a designated activity has to be made, how long a period of service would be required to qualify as part of an institution's target, and how to allocate the decision to enter a designated activity among multiple institutions involved in medical education. The all or nothing nature of a block grant may be inequitable in its differential treatment of institutions which either just miss or exceed their targets.

Capitation grants

An institution would receive a payment per graduate entering a designated activity. The size of the payment would presumably depend on the cost of generating desired choices. Institutions would still be free to choose any method of inducing desired choices, e.g., changing admissions policies, setting up special programs, or passing the payments onto the individual trainees. Unlike block grants, however, there is a distinct incentive for all institutions to increase the levels of desired activities. The extent to which institutions respond to this type of incentive will depend on the size of the payment, the interest to the institution in producing graduates of the desired types, and the costs of affecting physicians' choices. As in loan forgiveness for individuals, total costs of the program will depend on how net additions are defined and measured, and on how many physicians make the desired choices.

Administrative problems are similar to those listed for block grants, except that capitation payments are more flexible in that they don't have the all-or-nothing feature of a block grant. Another issue is whether institutions would receive payments in advance to finance any special activities which might be undertaken, since it might be several years before a graduate's choices would be determined. The alternative is to base payments on intentions to enter particular activities. Enforcement of such intentions may be difficult, however.

Categorical grants

Categorical grants would consist of payments to institutions for the purpose of establishing specific programs or activities. These might include, for example, rural preceptorship programs, family practice residencies, medical school teaching positions in family practice. Unlike either block or capitation payments, these grants would specify the "inputs" to be used without necessarily imposing output requirements.

Categorical grants may allow greater control over the specific use of grant funds. However, it is not clear that this is a more desirable method of reaching certain goals. The need to monitor and evaluate independent grants to multiple institutions would require a certain amount of administrative overhead. However, it may be easier to identify and phase out unsuccessful grants which focus upon institutional inputs rather than the more difficult ones related to outputs.

D. Possible Implications of National Health Insurance

There is considerable uncertainty at the present regarding both the structure and implementation date of a national health insurance system. Therefore, one can make only very general statements about how possible features of national health insurance might influence financing graduate medical education. Three types of mechanisms will be briefly considered:

(1) The method of reimbursing hospitals.

(2) The method of reimbursing physicians, and

(3) The range of covered services

Hospital Reimbursement

The pertinent issues of hospitals' reimbursement would appear to be whether educational costs should be reimbursed and, secondly, whether the method of reimbursement should be reasonable costs. The former was discussed in C(2) above and will not be repeated here. Under the latter, however, a frequently mentioned alternative is some type of fixed budget, prospective reimbursement, or flat rate system. (These are treated as roughly equivalent here, since they share the common feature of fixing the hospital's revenues, at least from public sources.) One supposed implication of this approach is that hospitals will be forced to be much more aggressive with regard to cost cutting and employment of an efficient mix of inputs. If total revenues are fixed, then one would expect hospitals to move toward offering more training in relatively less costly specialties, i.e., those which take fewer years of training, consume fewer direct resources (X-rays, lab tests, staff time) and are relatively more substitutable for other hospital services.

A variant of this method might use predetermined charges or fees for the various inpatient and outpatient procedures performed in a hospital. Again, economic considerations (residents' stipends, contributions to patient care, substitutability with other hospital employees, direct resource costs, and patient loads for different activities) would likely influence the mix of residencies offered. Compared to a total fixed budget system, predetermined charges would enable the reimbursing authority to manipulate relative charges so as to influence the returns to the hospital of offering training in particular specialties. In its simplest form, this might involve setting separate budgets for, say, inpatient, outpatient clinic, and emergency room services.

In general, however, this would appear to be a case of the "tail wagging the dog." Direct subsidies for training in designated specialties would seem to be more direct and, most likely, less costly as well.

Physician Reimbursement

One consequence of a "usual and customary" method of reimbursing physicians is that it tends to preserve existing differences in fees among specialties and locations, even when the same service is being provided. Thus, there is no increased incentive to enter a primary care or underserved area practice, particularly since the practices tend to have relatively lower earnings to begin with. Two alternatives which might be considered are flat fees for a particular service, regardless of the physician's specialty or location, or predetermined fees for different specialties and locations. Under an adjusted fee system, there may be an increased incentive to practice in an underserved area in a primary care specialty to the extent that the costs of choosing these activities are lower than the costs of alternative career decisions. In effect, the relative rates of return to primary care practitioners in rural areas would increase. The success of such a policy, at least in terms of influence on physician distributions, would depend on the magnitude of the adjustment in rates of return.

A third alternative is capitation or salaries for physicians similar to some European models. Political realities in the United States would seem to rule out universal conversion to this method of paying physicians at this time. In the long run, however, continued support of the expansion of the prepaid group practice concept could have a substantial impact on the labor market for physicians. First, prepaid group practices would be informed, institutional demanders of physicians' services. The supposed incentive to provide medical care efficiently to a specified population would in some sense "rationalize" the demand for physicians' services. Although caution must be exercised, examination of specialty distributions within existing prepaid group practices suggests a marked increase in the role of primary care physicians. Secondly, and perhaps more importantly, prepaid groups can provide the non-monetary factors, such as regular and fixed hours, collegial contact, and back-up when needed, whose lack tend to discourage physicians from entering primary care/underserved areas in the context of solo practice. In effect, this type of institutional shift would also affect the relative rates of return to various career choices.

In general, although the method of physician reimbursement might very well have a substantial impact on long run specialty distributions, there would not seem to be a significant direct effect on graduate medical education. It would seem that the primary objective in designing a physician reimbursement system should be promoting the efficient provision of an adequate supply of services. To the extent that there are spillovers to the educational system, these effects should be either compensated for or reinforced by direct intervention into physician training.

Extent of Coverage

It is generally agreed that if national health insurance includes universal coverage of all medical services for the entire population, the biggest shift in demand will be for ambulatory services.5/ This presumption is based on the observation that hospital insurance for inpatient care is already quite extensive and many uninsured people have access to hospital care through public hospital systems. One likely consequence of such a large shift in the demand for ambulatory care relative to inpatient care might well be a jump in fees and earnings of specialties which tend to provide relatively more ambulatory care.

Similarly, since insurance coverage (excluding Medicare) is strongly related to income levels, one would expect demand to increase relatively more for low income than for high income families and individuals. Again, this should increase both the earnings of physicians serving such populations and their relative share of medical care services. Both of these factors may move physician distributions in desirable directions over the long run as relative rates of return are affected. However, this may be tempered by the ability to continue earning satisfactorily high earnings in non-primary care/ non-underserved area specialties.

Since it was stated above that hospitals' mixes of offered residencies is influenced principally by the demand for services in the hospital, a relative increase in the demand for ambulatory services could very well induce hospitals to increase the proportion of residencies in ambulatory oriented specialties. The extent of this effect, however, would also depend on the nature of the reimbursement methods and rates for the various types of services. In particular if cost based reimbursement at less than 100% recovery for ambulatory services is retained, then hospitals might still be reluctant to offer residencies in primary care, even in the face of increased demand.

E. Unionization of Residents and Changes in the Supply of Foreign Medical Graduates (FMGs)

Two emerging trends which may very well have substantial impacts on teaching hospitals are the unionization of residents and sharp reductions in the supply of FMGs to residency training positions.

(1) Unionization

Unionization by residents is part of the general trend towards unionization of other hospital employees and, indeed, of service workers in all occupations. It is a process which, when applied to residents, tends to evoke highly emotional responses, partially because of the controversy over whether residents are students or employees; partially because of the hospital's image as a charitable institution; and partially because of a belief that professionalism is inconsistent with unionization. Professionalism, however, does not seem to have precluded the unionization of practicing physicians in other countries, with Canada as the most proximate example. Similarly, the advent of

Medicaid and Medicare, and the growth of private hospital insurance have largely made the charitable hospital an anachronism.

When stripped of its emotional veneer, the issue of unionization reduces primarily to how much will hospitals have to pay for the services provided by residents. Whether this involves salaries (stipends), working hours, fringe benefits or program content is largely irrelevant. To the extent that residents succeed in increasing their returns along any combination of these dimensions, whether through formal union bargaining or informal agreements, the costs to the teaching hospital will increase. In large part, this is but an aspect of the implicit transaction between hospital and resident described earlier. Residents provide services to the hospital, but agree to receive less than their full value monetarily in exchange for training provided by the hospital. Exactly where this bargain is struck depends on factors which govern most economic transactions in the long run: the value of the services provided, the availability of substitutes to provide services, and the range of alternatives available to residents. (In the short run, of course, there are additional costs and disruptions associated with strikes, lockouts, etc. However, the concern of this paper is with the long run consequences.)

What might be the effects on hospitals and residents? Based on the objectives of the teaching hospitals and the physicians in training discussed at the beginning of this section since no empirical evidence is available, several possible reactions might be anticipated: hospitals could move toward increased employment of lower priced substitutes for residents, e.g. new types of professionals such as nurse practitioners and physician assistants or specialized technicians; the total number of positions offered could be cut; and the mix of residencies could be shifted from those specialties which generate the largest net revenues from gross patient revenue (more expensive procedures, longer lengths of stay, ancillary services) and yet have higher costs generated by longer residencies associated with these specialties, to shorter residency programs focused on ambulatory primary care. These types of shifts, as pointed out previously, depend on the financial incentives and constraints faced by the hospital as well as the extent to which status or prestige is an objective of the hospital.

(2) Reduced Supply of Foreign Medical Graduates (FMG's)

Unlike unionization which may lead to a decrease in residency positions offered by teaching hospitals, this issue addresses the increasing number of residency positions offered by teaching hospitals as they increase their affiliation with medical schools and increase their bed capacity and new hospitals are built. (The implications of the latter two for health planning and cost containment are beyond the scope of this paper but the emphasis on in-patient rather than ambulatory care has been discussed previously.)

There has been a concurrent increase in the number of graduates from U.S. medical schools and if the percent of residency positions filled is taken as a criterion (Appendix Table V, page) this has remained at a high level. However, if the number filled by FMGs is examined, it is seen that FMGs tend to be concentrated in those hospitals which serve special populations: low income, chronically ill, veterans, etc.

Thus, the consequence may be that as residency positions increase, the "more desirable" positions will continue to be filled by USMGs, leaving the "less desirable" ones unfilled when the impact of the constraints placed on FMGs by the Health Professions Educational Assistance Act of 1976 (P.L. 94-484) is felt. Aside from the impact on teaching hospitals, therefore, is a more serious consequence of reduced access to medical care by population groups which already suffer relatively poor access.

An additional factor potentially reducing the number of Foreign Medical Graduates coming to the United States for graduate medical education is the concern about the qualifying examination for doing so. In the past, FMGs have been required only to pass the ECFMG (Educational Commission for Foreign Medical Graduates) examination which can be taken at any time in their career. This has led to different standards for FMGs and the USMGs who take Part I of the NBME (National Board of Medical Examiners) examination at the end of their sophomore year and Part II in their senior year of medical school. P.L. 94-484 states that FMGs be required to pass the NBME examination as well as an English facility examination.

If these "less desirable" positions are to be filled, or if indeed they can be filled, by USMGs then the higher monetary expectations of these residents may be beyond the ability of state and local institutions.

The principal concern regarding the reduction of FMGs as proposed by P.L. 94-484, however, is the provision that after completion of training FMGs must return to their country of origin and will no longer receive preference for immigrating to the U.S. Not only do FMGs fill residency positions in less desirable institutions, they also tend to practice in these institutions or other underserved areas. The relationship of this provision to incentives toward specialty choice and geographic distribution for USMGs deserves careful consideration.

This reduction in FMGs in teaching institutions and in practice locations also has implications for the utilization of new types of health manpower (nurse practitioners and physician's assistants) to fill a potential gap in the delivery of patient care.

This section has presented some of the issues surrounding the future of the financing and reimbursement of graduate medical education and some options for changes in approach. It has emphasized the need to take into account the objectives of society, the teaching hospital, and the individual physicians in training in considering these options. The relationships between the needs for primary care delivery, legislation to meet those needs, the impact of unionization and foreign medical graduates on residency positions and these objectives have been explored. Policy options have been presented

in their broadest context and in the absence of supportive data. The following section summarizes the paper and gives research recommendations.

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V. SUMMARY AND RECOMMENDATIONS FOR RESEARCH IN THE FINANCING OF GRADUATE MEDICAL EDUCATION

A. Summary of Current Status and Future Options

This paper has described a number of characteristics of the graduate medical education system focusing on the dimensions, methods, issues, and options pertinent to its financing. It was conceived around two themes regarding data:

- The current status of the financing of graduate medical education about which we have some, though limited, data, and
- The incentives and constraints surrounding future options in financing and exogenous issues which will have an impact on both financing and graduate medical education per se. Little or no data exist on these issues and options.

After a brief description of the history of the growth of graduate medical education to place financing and reimbursement in context, Section II presented the current various sources of funding for GME. These were differentiated between direct federal, state, and local level funding, e.g. Veterans Administration or state university teaching hospitals, and indirect support through patient revenues, e.g. Medicare, Medicaid, and other third party payors. The latter was critical since approximately 90% of the costs for graduate medical education, outside of federal and state hospitals, comes from patient revenues. In an effort to arrive at a total figure for current financing of graduate medical education the following figures were derived from the diverse data sources:

Direct Federal support	$217.2M
Estimate of direct support in State and Local government hospitals	43.8
Estimate of indirect support through patient revenues	520.1
Total approximation for GME from these sources of support	$781.1M

Major concerns are the inability to separate the educational costs in GME from reimbursement for services rendered in patient care and the impact of the educational process on additional costs in the teaching hospital.

Section III presented the geographic distribution and specialty choices of residency positions in the context of financial issues surrounding these positions: salary, "moonlighting," and collective bargaining. Salaries (stipends) for first year residents in one study range from $13,500 in New York City to $9,200 in Dallas, Texas. The discrepancy widens by the sixth year to over $6,000. "Moonlighting" (working on off-duty hours), the

traditional method of augmenting residents' salaries is directly related to collective bargaining. Hospital policies vary on the former and whether residents will be permitted to engage in collective bargaining is still in the Courts. This section includes the limited data on these issues. Section IV explores their implications.

Also in Section III, available data were manipulated to arrive at some approximation of the effects of current legislation (PL 94-484) on the costs of graduate medical education in the future when the emphasis is to be changed from subspecialties requiring five to six years of residency training to primary care specialties which usually require only three. Even given these changes, based on a number of assumptions, the costs for GME salaries by 1990 could be four billion dollars (page 50).

Section IV presented the objectives of society, teaching hospitals and individual physicians in training in supporting graduate medical education; some options for financing at the institutional or teaching hospital and individual levels; and some of the issues which have an impact on financing GME.

It was emphasized that any future options in financing graduate medical education must be considered in the light of the following objectives:

Society

- training qualified physicians to deliver medical care
- increased numbers of physicians in primary care specialties
- equity of access to medical care both geographically and holistically in terms of personal costs to secure them
- incentives and constraints chosen so that the products of graduate medical education meet the first three objectives at least cost to society.

Teaching hospital

- patient care
- teaching
- research
- prestige
- meeting the first four objectives within the constraints of revenue sources

Individual

- intellectual challenge
- collegial relationships
- quality of life
- an acceptable income level taking into account the first three objectives

Given these objectives, some financing options are:

At the institutional or teaching hospital levels

- block grants
- capitation payments for students selecting particular specialty or location choices

- categorical grants for establishing specific programs to influence specialty and location choices

At the individual level

- self-financing through loans, scholarships, and/or loan forgiveness
- direct fee-for-service reimbursement
- direct subsidies for establishing practices in certain areas and/or certain specialties

Some of the current issues which have an impact on graduate medical education are national health insurance, unionization of residents in teaching hospitals, and the effects of the Health Professions Educational Assistance Act of 1976 (P.L. 94-484), particularly with regard to Foreign Medical Graduates.

The implications of a national health insurance plan center around the method of reimbursing hospitals and/or reimbursing physicians and the range of services a plan might cover. It is generally agreed that if the plan includes universal coverage of all medical services for the entire population, the biggest shift in demand will be for ambulatory services.

The trend toward unionization of residents and increasing costs to the teaching hospitals in terms of salaries and fringe benefits may well lead these institutions to consider alternative methods of achieving their objective of patient care. One of these methods might be the utilization of new types of health professionals, e.g. nurse practitioners and physician's assistants. These alternatives would have to consider other objectives of the institution and its faculty in teaching and prestige factors.

The impact of P.L. 94-484 regarding Foreign Medical Graduates is of paramount concern, both for residency positions and practice locations after residency. The limited studies which have been done show FMGs occupying "less desirable" residency positions, e.g. Veterans Hospitals, and practicing in underserved areas, both urban and rural, institutional and solo-practice.

These have tended to be the least reimbursed positions and practice areas. The issue is how such positions can be filled within the economic constraints of society and teaching institutions.

B. Policy Implications

Policy makers have a variety of individual, institutional, and indirect options for financing graduate medical education. Decisions from among these options should be based on the degree to which they lead to attainment of society's objectives of "the right number of physicians of the right kind in the right place" achieved in the most cost effective manner. There are several considerations, discussed previously, that have an impact on the achievement of these objectives.

It may be that a physician in training is not especially sensitive to either financing methods during training or expected earnings in practice as an incentive toward specified specialty or location decisions. It would also seem that the present indirect financing of GME through patient care revenues is disproportionate to the educational component and difficult to target in cost accounting. On the other hand, recent experience with the growth of family practice residencies and the responsiveness of medical schools to capitation grants from the Bureau of Health Manpower (HRA, DHEW) suggests that institutional response to financial incentives can be both targeted and prompt.

It is also possible that the relationship between the location of residency training and practice location that has been shown in some studies may disappear if, in fact, residencies were reallocated to "less desirable" positions both by specialty and geographic location, e.g. primary care residencies in rural areas.

In contemplating potential reallocation of training sites, it is obvious that the nature of training provided in rural locations would be significantly different than that in underserved urban areas. This suggests a need also for redefining the nature of graduate medical training and how non-institutional providers might be reimbursed for training provided. Non-institutional graduate education has been the model used until recently by Schools of Osteopathy. They are now gradually changing to the institutional model. With regard to financing options, this non-institutional approach might more appropriately fall under one at the individual level.

The complexity and diversity of the graduate medical education system suggests that the mix of policies selected for moving toward desired societal objectives in reaching an optimal financing system be as flexible as possible.

The question of how the costs of graduate medical training should be divided in options between residents and teaching hospitals cannot be determined in advance. It depends on the quality of the training provided, the content of training activities, and the quantity and kinds of medical care services provided by residents. Since these factors will likely vary from setting to setting, predetermined shares would be most difficult to assess or regulate. There is a need, then, for the establishment of a mechanism which encourages and facilitates some degree of equity among the relevant parties: residents, teaching hospitals (or other teaching providers, including office based physicians), and patients.

Finally, to the extent that public subsidies are called for, the federal government might be the preferred source of funds rather than state or local governments for several reasons. Specialty and location distributions

should be the focus of national health manpower planning and only at the federal level can competing demands for physicians be evaluated and ranked. Physician mobility leaves some individual states unable to meet local demands through their medical education systems while supplying physicians to other states. It is imperative that a system be established for monitoring changes in physician supply and distribution, and that this system be used both to aid in establishing national goals in response to changing patterns of demand for physicians and to evaluate the impacts of various financing mechanisms.

C. Recommendations for Research

This paper has repeatedly pointed out the paucity of data on the financing and reimbursement of graduate medical education. There are two kinds of data which are needed: those which can be collected in a relatively short period of time to give insights into the various activities and funding sources of physicians in training and longer term studies of impacts of changes in reimbursement mechanisms on the graduate medical education system, e.g. costs for training and career choices for residents.

Before listing some recommendations for specific research, it must be stated that an obvious research companion to the multiple funding options discussed previously is that a portion of subsidy funds be allocated for evaluating the results of alternative programs and financing systems. In particular, every effort should be made to collect research data on a relatively uniform basis across programs, sites, and financing systems.

Further, in order to facilitate research and evaluation, project and program objectives should be clearly established and made explicit while projects and programs are in the design and formulation states. This will encourage coordination between research and program management data needs. These kinds of recommendations are particularly within the purview of the GMENAC.

Some of the short-term research questions which need to be answered currently are:

1. What are the current costs of teaching hospitals in providing graduate medical education in terms of administration, teaching, salaries to residents and associated overhead costs?

2. How are revenues allocated to meet the costs of GME, particularly with regard to educational activities versus patient care? What accounting mechanism can be established to secure these data on an on-going basis?

3. How do teaching hospitals and the graduate medical education faculty view the trade-offs between costs in terms of education, use of ancillary services, e.g. extra laboratory tests, X-rays, and the objectives of prestige and cost containment?

4. How do teaching hospitals contemplate coping with increasing costs of residency programs? The reduction in foreign medical graduates? Are new kinds of health professionals a viable option?

5. What cost redistribution do teaching hospitals see as a result of a change of emphasis from subspecialties to a focus on primary care specialties? What impact will the current level of reimbursement for ambulatory care have on these potential cost savings?

6. What effect would moving primary care residency programs out of the teaching hospital into, e.g. Area Health Education Centers have on costs and location choices? What can be learned from the National Health Service Corps experience? What can be applied from the traditional "apprenticeship" method used by Schools of Osteopathy and the change to institutional training?

While there is clearly a pressing need to establish policies and programs in order to respond to current issues, it should also be clear that the processes of physician distribution generally require a long period of time to work themselves out. More importantly, monitoring and intervention into the process will certainly be a continuing activity. For this reason, priority should be given to establishing longitudinal samples of physicians who would be surveyed during their pre-medical, medical, and post graduate years in order to better estimate the influence of changing financial, market, and societal conditions on physicians' career choices. If such longitudinal samples could be successfully established and maintained, they could then become the basis for latest surveys and analyses of physicians' practice decisions e.g., prices, hours, patient loads, staffing etc. The existence of a publicly available data base of this sort would be a rich source of information for future as well as current policy and research issues.

In the long term, looking at the various options discussed in Section IV. the following questions would allow some assessment of the alternatives:

1. How do different institutions (medical schools and teaching hospitals) respond to a grant of a given type and amount as a function of form of control and current budget size?

2. What would be the differential effect in terms of public and private control and budget allocation of awarding a specific sum in the form of a capitation, block, or categorical grant to these institutions to support GME?

3. As a result of these changes in funding, were there, in fact, changes in institutional outputs, e.g. ultimate career choice of residents and lowered costs for training?

4. What criteria should be used to measure changes? How will career choices and lowered costs be defined?

5. Will changes in various mechanisms such as maximum loan or scholarship, interest rate, repayment periods, or loan forgiveness options affect the career choices of these physicians? Should time limits on these choices be established?

Also, to the extent that teaching hospitals, medical schools, and medical education associations are involved in the design, implementation, and maintenance of data, there will be opportunities for improving communication among parties interested in the same sets of issues in graduate medical education: patient care and cost containment with an aside for prestige. It has been evident throughout this paper, from the diverse sources of data, that this communication has not been present. It is hoped that the National Advisory Committee will provide the necessary catalyst for such communication.

OUTLAYS FOR PHYSICIANS' TRAINING, BY AGENCY, FISCAL YEARS 1968-74
IN THOUSANDS OF DOLLARS

Agency	1968	1969	1970	1971	1972	1973	1974
Total	-	$169,584	$185,036	$224,780	$269,007	$317,725	$407,172
Department of Health, Education and Welfare	$58,876	89,201	101,486	126,116	169,179	198,918	238,457
HSA: Health Service	2,844	3,207	4,895	3,282	4,062	5,512	8,018
HSA: Indian Health Service	842	686	860	893	642	615	665
HRA: Bureau of Health Manpower Education	18,018	46,108	52,315	80,425	112,814	154,696	189,965
Alcohol, Drug Abuse and Mental Health Administration	31,909	30,743	34,936	32,291	42,294	27,219	28,429
Social and Rehabilitation Service	4,328	4,696	4,500	4,300	3,381	3,804	3,040
Other HEW	935	3,761	3,980	4,925	5,986	7,072	8,340
Appalachian Regional Commission	NA	3	298	98	527	442	224
Department of Defense	NA	32,187	24,120	32,121	22,088	27,664	67,303
Veterans Administration	NA	48,193	59,132	66,445	77,213	90,701	101,188

Source: Federal Health Spending 1973-74

APPENDIX TABLE II

Source of Income of Medical Students
By Control of Medical Schools

Source of Income	All Schools	Public Schools	Private Schools
Total Income	100%	100%	100%
Total Non-refundable funds	84	85	82
Own earnings and savings	23	24	22
Spouse's earnings	24	27	20
Gifts/loans from family	21	17	25
Federal Health Professions Scholarship	1	1	1
NIH-supported Research Grants, etc.	1	*	1
Armed Forces Pay/Armed Forces Health Professions Scholarship	6	8	5
Veterans benefits	1	1	1
Public Health Service Scholarship	2	2	2
Physician Shortage Area Scholarship	1	1	*
National Medical Fellowship	*	*	*
Robert Wood Johnson Scholarship	*	*	*
Grants from school funds	2	2	3
State scholarship	1	1	1
Other non-refundable	1	1	1
Total Refundable	16	15	18
Federal Health Professions Loan	4	4	4
National Direct Student Loan/ National Defense Education Student	*	*	1
Guaranteed loan (through school or private bank)	7	6	8
School loan	1	1	1
State loan	1	1	1
Private bank loan (not guaranteed)	1	1	1
Robert Wood Johnson Loan	*	*	*
AMA-ERF Loan	1	1	1
Personal loan	*	*	*
Other Loans	1	1	1

* - Less than 0.5 percent.

Source: Survey of How Medical Students Finance Their Education, 1974-75.

APPENDIX TABLE III

OBLIGATIONS INCURRED BY STUDENTS UNDER P.L. 94-484
HEALTH PROFESSIONS EDUCATIONAL ASSISTANCE ACT OF 1976

Refundable (Undergraduate medical, osteopathy, and podiatry-MOP)

1. Loans to students through the health professions assistance act extended through FY 1977 to cover existing obligations and it is then repealed. Loans shall be repayable in equal or graduated periodic installments over a ten year period which begins one year after study completed. Such loans shall bear interest on the unpaid portion of the loan at the rate of 7% per annum.

   Maximum loan increased from $3,500 to cost of tuition and $2,500.

2. Federally insured loans to health professions students* (effective FY 1978); loans are guaranteed up to $10,000 a year for students in medicine, osteopathy and podiatry (MOP) and an aggregrate of $50,000. Loans are to be used only for tuition, tools and other reasonable costs.

   Loan principal repayable over a period of 10-15 years starting 9-12 months after completion of training. Interest repayable by student throughout life of loan at a rate not to exceed 10%. Defaults on loans insured up to 100% of principal and interest. Students payment on principal not required during periods of up to 3 years of internship and residency training or service in Armed Forces, Peace Corps, National Health Service Corps or Vista Volunteer Program.

3. National Health Service Corps Scholarships are provided for a school year under a written contract, and include tuition in such school year and all other reasonable educational expenses, and a stipend of $400 a month.

   Each recipient of a scholarship is obligated to serve one year for each year a scholarship was provided or two years, whichever is greater, in a health manpower shortage area.

* (Medicine, osteopathy, podiatry, dentistry, and veterinary medicine)

APPENDIX TABLE IV

Number of Internships, by Type of Hospital Control

Control	No. of Hospitals	No. of Approved Programs	Number of Internships: Total Positions Offered Sept. 1, 1973	Number of Internships: Total Positions Filled Sept. 1, 1973	Number of Internships: Positions Vacant Sept. 1, 1973	Percentage Filled	Number of Interns on Duty: Grads., US, Canada Sept. 1, 1973	Number of Interns on Duty: Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in Filled Positions	Total Flexible Positions Offered 1975-1976
Combined Hospitals	90	251	2,141	2,047	94	96	1,770	277	14	306
Totals	90	251	2,141	2,047	94	96	1,770	277	14	306
Federal										
U.S. Air Force	3	7	42	42	-	100	42	-	-	4
U.S. Army	7	41	182	177	5	97	177	-	-	86
U.S. Navy	5	54	135	121	14	90	119	2	2	62
U.S. Public Health Service	4	14	86	65	21	76	50	15	23	51
Veterans Administration	40	9	83	79	4	95	53	26	33	-
Other Federal	2	14	30	18	12	60	13	5	28	12
Totals	61	139	558	502	56	90	454	48	10	215
Governmental Non-Federal										
State	49	147	960	877	83	91	831	46	5	249
County	33	112	889	847	42	95	705	142	17	258
City	32	84	597	550	47	92	269	281	51	87
City-County	11	28	180	167	13	93	153	14	8	43
Hospital District	10	39	170	149	21	88	124	25	17	55
Totals	135	410	2,796	2,590	206	93	2,082	508	20	692
Non-Governmental Non-Profit										
Church Related	119	376	1,637	1,356	281	83	727	629	46	427
Non-Profit Corporation	334	1,026	5,008	4,516	492	90	2,573	1,943	43	893
Totals	453	1,402	6,645	5,872	773	88	3,300	2,572	44	1,320
Proprietary										
Individual	-	-	-	-	-	-	-	-	-	-
Partnership	-	-	-	-	-	-	-	-	-	-
Corporation	2	2	25	20	5	80	-	20	100	-
Totals	2	2	25	20	5	80	-	20	100	-
Grand Totals	741	2,204	12,165	11,031	1,134	91	7,306	3,425	31	2,533

Source: Directory of Approved Residencies 1974-75, AMA

APPENDIX TABLE V

NUMBER OF RESIDENCIES, BY TYPE OF HOSPITAL CONTROL

Control	No. of Hospitals	No. of Approved Programs	Number of Residencies: Total Positions Offered Sept. 1, 1973	Number of Residencies: Total Positions Filled Sept. 1, 1973	Number of Residencies: Positions Vacant Sept. 1, 1973	Percentage Filled	Number of Residents on Duty: Grads., US, Canada Sept. 1, 1973	Number of Residents on Duty: Foreign Graduates Sept. 1, 1973	Percentage For. Grads. in Filled Positions	Total Residency Positions Offered 1975-1976
Combined Hospitals	188	1,250	20,275	19,102	1,173	94	15,131	3,971	21	24,004
Totals	188	1,250	20,275	19,102	1,173	94	15,131	3,971	21	24,004
Federal										
U.S. Air Force	5	31	373	311	62	83	310	1	-	415
U.S. Army	12	94	884	797	87	90	776	21	3	1,131
U.S. Navy	12	71	735	645	90	88	640	5	1	880
U.S. Public Health Service	9	24	167	125	42	75	114	11	9	207
Veterans Administration	100	124	1,100	1,022	78	93	425	597	58	1,328
Other Federal	5	14	98	68	30	69	50	18	26	130
Totals	143	358	3,357	2,968	389	88	2,315	653	22	4,091
Governmental Non-Federal										
State	212	475	5,188	4,516	672	87	3,270	1,246	28	5,990
County	71	214	2,462	2,239	223	91	1,612	627	28	3,318
City	45	107	1,266	1,170	96	92	450	720	62	1,533
City-County	20	70	401	351	50	88	297	54	15	558
Hospital District	12	22	321	272	49	85	230	42	-	402
Totals	360	888	9,638	8,548	1,090	89	5,859	2,689	31	11,801
Non-Governmental Non-Profit										
Church Related	197	474	3,836	3,217	619	84	1,654	1,563	49	4,983
Non-Profit Corp	672	1,861	16,516	14,983	1,533	91	8,968	6,015	40	20,429
Totals	869	2,335	20,352	18,200	2,152	89	10,622	7,578	42	25,412
Proprietary										
Individual	1	-	-	-	-	-	-	-	-	-
Partnership	3	1	4	1	3	25	1	-	-	4
Corporation	13	8	62	50	12	81	33	17	34	45
Total	17	9	66	51	15	77	34	17	33	49
Grand Totals	1,577	4,840	53,688	48,869	4,819	91	33,961	14,908	31	65,357

Source: Directory of Approved Residencies 1974-75, AMA

APPENDIX TABLE VI

PERCENT DISTRIBUTION OF HOUSE OFFICER TIME

	Total	Principal	Graduate associated	Under-graduate associated	Independent
Total	100	100	100	100	100
Patient care total	67	64	70	73	71
Patient care with direct supervision	29	28	32	31	34
Patient care without direct supervision	38	36	38	42	37
Teaching with patient care	17	18	17	14	15
Learning	10	10	8	10	10
Teaching	2	3	2	1	2
Research	3	4	2	1	1
Administration	1	1	1	1	1

Source: Institute of Medicine Field Data, Medicare-Medicaid Study

APPENDIX TABLE VII

Funding Sources Used to Pay Interns and Residents by type of Hospital Control (excluding Federal) 1975-76
Number of Times Funding Sources were Mentioned

Percent of Support	Patient Revenue		Federal Dollars		State-Municipal		Medical School		Private Grants		Other Hospitals		Misc.	
	P	S&M	P	S&M	P	S&M	P	S&M	P	S&M	P	S&M	P	S&M
1-10%	0	0	19	5	5	2	8	1	12	2	2	2	6	2
11-20%	0	2	5	0	3	1	7	5	3	2	3	3	4	0
21-30%	0	1	1	3	1	3	1	2	0	1	4	4	0	0
31-40%	1	2	1	0	2	1	3	5	0	0	3	3	0	1
41-50%	2	1	1	1	2	2	1	0	1	0	3	3	0	1
51-60%	2	7	0	0	0	1	0	0	1	0	2	2	0	0
61-70%	8	3	0	0	0	2	0	0	0	0	1	1	0	0
71-80%	11	5	0	0	0	0	0	0	0	0	0	0	0	0
81-90%	17	3	0	0	0	1	0	0	0	0	0	0	0	0
91%+	143	16	0	0	1	9	0	0	0	0	0	0	0	0
Total	189	40	27	9	14	22	20	13	17	5	18	18	10	4

*Data for many of the hospitals will appear under more than one source of funding.

m=208 Private Hospitals
m= 58 State and Municipal Hospitals

Source: COTH, Association of American Medical Colleges (personal communication).

APPENDIX TABLE VIII

Committee of Interns and Residents, New York, N.Y.
February 9, 1976

Collective bargaining provisions in New York; New Jersey; Pennsylvania; Maryland; Washington, D.C., Virginia; North Carolina; South Carolina; Georgia; and Florida. See Attached Summary Sheet. (Administrative Paper)

1. Labor Relations Acts in the Private Sector

(a) The following states have comprehensive labor relations acts in the private sector, including the right to self-organization, to form labor unions, to bargain collectively, and to engage in concerted activities for collective bargaining purposes:

New York (Sections 700-717, Labor Law)
Pennsylvania (Title 43, Section 211.1-211.12)

(b) The following states have no specific labor relations provisions in the private sector:

Virginia
North Carolina
South Carolina

(c) Other states:

New Jersey: Has no comprehensive labor relations act. However, Article I, paragraph 19, of the state constitution gives private employees the right to organize and to bargain collectively. "Yellow Dog" contracts are prohibited by 34:12-3 - 34:12-5. New Jersey also has specific provisions for labor disputes for those working in public utilities.

Maryland: No comprehensive labor relations act. However, Article 100, Section 63 gives employees the right to self-organization, and Section 64 outlaws "Yellow Dog" contracts.

Washington, D.C.: Congress has not passed any labor relations act specifically for the District of Columbia. However, "commerce" is defined in the National Labor Relations Act so as to include all commerce within the District of Columbia, without regard to jurisdictional dollar amounts. So the NLRA will apply to District of Columbia labor relations.

Appendix Table VIII (Continued)

Florida: No comprehensive labor relations act. However, Section 3 of the Union Regulations Act guarantees employees the right to form, join, or assist labor organizations, to bargain collectively, and to engage in concerted activity for the purpose of collective bargaining. Other sections of this act specify what constitutes unlawful conduct by unions, limit maximum union initiation fees, require the licensing of business agents for unions, and require certain reports from unions.

Georgia: Has no comprehensive labor relations act, but does have legislation which forbids union security agreements by public employees, and regulates strikes and picketing.

2. Special provisions for the hospital industry

Only New York has such provision. Section 716 of the Labor Law states that collective bargaining contracts with employees, or their representatives, in non-profit making hospitals and residential care centers which do not contain provisions for the final and binding determination of grievances, shall be deemed to include a provision for the submission of such grievances to final and binding arbitration. Impasse in collective bargining is subject to a form of arbitration.

3. Labor Relations Acts in the Public Sector

In Maryland, the District of Columbia, Virginia, South Carolina, and Georgia it is uncertain whether any hospital employees are "public employees." In the case of North Carolina, only persons engaged in law enforcement or fire protection are "public employees."

(a) Right to collective bargaining

(1) Public employees have the right to engage in collective bargaining in the following states:

New York - (Civil Service Law 200, 203)
New Jersey - (34:13A - 5.3) (with exceptions not relevant here).

Pennsylvania - (Penn. Public Employees Relations Act - Act. No. 195, July 23, 1970, Section 101-2301).

Washington, D.C. - (District Commissioner's Order No. 70-229-Part 1)

Florida - (447.001, 447.006)

(2) The following states have collective bargaining provisions for public employees for portions of the state:

Maryland: The Baltimore City Code, Section 112, provides for collective bargaining for public employees. Article I, Section 64 B(A) of the Code of Public Local Laws - implies that public employees in Allegheny County have the right to engage in collective bargaining. There seem to be no clear provisions for public employees elsewhere in Maryland.

Georgia: Public employees in Chatham County and in the City of Savannah have the right to engage in collective bargaining. There are special provisions for collective bargaining and strikes for firefighters. There do not appear to be any explicit provisions for other public employees.

(3) South Carolina has no provisions on this subject.

(4) The following states seem to forbid collective bargaining by public employees:

Virginia: No statute forbids or permits collective bargaining by public employees. However, an opinion of the State Attorney General, dated October 7, 1974, states that, absent express authority from the General Assembly, local units of government may not enter into collective bargaining agreements with their employees. An earlier opinion of July 1962 states that city officials are not duty bound to negotiate with a union representing city employees, but may do so if they wish. State policy, the opinion went on to say, discourages but does not forbid such dealings).

North Carolina: Under Section 95-85 of the laws of North Carolina, public employees may not be members of any trade union, or labor organization affiliated with a national labor organization which has as its purpose or one of its purposes, collective bargaining with any employee. (This statute probably only covers persons in the fields of law enforcement or firefighting. A three-judge federal court held this statute unconstitutional in: Atkins v. City of Charlotte, 296 F. Supp. 1068, 70 LRRM 2732 (D.C.N.C. 1969).)

(b) Provisions for determining bargaining representatives for public employees:

(1) The following states have such procedures:

New York - (Civil Service Law 204, 204a, 206, 207).
New Jersey - (19:11-1.1, 19:11-1.2).
Pennsylvania - (Article VI: 601-607)
Washington, D.C. (see LMRA; see also Public Employment Rules and Regulations - Chapter II - Parts 201 and 202).

Florida - (447.008, 447.009; see also Public Employees, Rules and Regulations 8H-200, 8H-300)

(2) Maryland has procedures for Baltimore City (Code Sections 115-117), and for Allegheny County (See Article I Section 64B(A) of the Code of Public Local Laws).

(3) Georgia has no specific provisions on this subject.

(c) Impasse Procedures:

New York - (Civil Service Law 209 - provides for PERB assistance or for the appointment of a fact-finder).

New Jersey - (Section 34:13A-6(b) - provides that the state commission may take steps to effect a voluntary resolution, or, the Division of Public Employment Relations may direct or suggest fact-finding).

Pennsylvania - Article VII, Sections 801-80, procedures for mediation, fact-finding, or arbitration).

Florida - (447.012 - provides for a mediator to be appointed by either party, or for appointment of a special master acceptable to both parties, and for submission to the legislative body if impasse is not resolved by the special master. See also Public Employee Rules and Regulations, 8H-500).

Washington, D.C. - (Part 401 - provisions for a mediator on request of the parties, or upon a motion by the Personnel Office, to be appointed by the Board).

Maryland - Baltimore - see Baltimore City Code Section 119- appointment of an impasse panel. Allegheny County - see Section 64B(C) of the Code of Public Local Laws - which provides for the appointment of an impasse panel by the County Commissioner. There are no provisions for other parts of Maryland.

Georgia - No specific provisions.

(d) Strike Provisions:

(1) The following states prohibit strikes by public employees:

New York - (Civil Service Law 210)

New Jersey - (see Board of Education v. N.J. Education Association, 69 LRRM 2870, 247 A. 2d 867 (New Jersey Supreme Court, 1968))

Appendix Table VIII (Continued)

Florida - (447.001(4), 447.018)

Maryland - Strikes are barred in Baltimore (see Baltimore City Code), and in Allegheny County (see Code of Public Local Laws 64B CD). No provisions for the rest of the state.

(2) Washington, D.C. and Georgia have no express provisions.

(3) Pennsylvania permits strikes by public employees except where they create a clear and present danger to the health, safety, or welfare of the public, or if they occur during an Article VIII impasse proceeding.

The next page is a graphic summary of the collective bargaining provisions in the ten states just described in the narrative. The code for the summary is a + for the states which have specified collective bargaining provisions and an X for those which do not.

Appendix Table VIII (Continued)

Summary Sheet of Collective Bargaining Provisions in Ten States

	N.Y	N.J.	Pa.	Md.	D.C.	Va.	N.C.	S.C.	Ga.	Florida
Voluntary Hospitals Right to organize	+	+	+	+	+	X	X	X	X	+
Right to compel collective bargaining	+	+	+	X	+	X	X	X	X	+
Machinery re representation and bargaining	+	X	+	X	+	X	X	X	X	X
Impasse machinery	(arbitration) +	X		X	X	X	X	X	X	X
Public Hospitals; Right to organize	+	+	+	Baltimore + Allegheny Co. +	+	X	X (express statutory prohibition held unconstitutional	X	Chatham Co. + Savannah +	+
Right to compel collective bargaining	+	+	+	Baltimore + Allegheny Co. +	+	X	X	X	Chatham Co. + Savannah +	+
Machinery re representation and bargaining	+	+	+	Baltimore + Allegheny Co. +	+	X	X	X	X	+
Impasse machinery	(fact-finding for State (Arbitration for City) +	(fact-finding) +	(arbitration) +	Balti. (impasse panel) + Allegheny Co. (impasse panel) +	(mediation) +	X	X	X	X	(mediation Special Master, legislative) +
Prohibition of strike	+	+	+ prohibits strikes creating clear & present danger or during imp. pro.	Baltimore + Allegheny Co. +	No express statutory provision	No express statutory provision	No express statutory provision	No express statutory provision	No express statutory provision	+

APPENDIX TABLE IX

VARIOUS FREQUENCY DISTRIBUTIONS OF PHYSICIAN LOCATION

A. Percent of Graduates with Residency Training, Practicing in the Same State as:	Year of Graduation 1945	1950
Residency Training	58.8	62.8
Prior Residence	54.6	52.5
Internship	42.3	47.5
Medical College	42.4	42.3

B. Percent of All Graduates Practicing in the Same State as:	Year of Graduation 1945	1950
PMIR	23.1	25.3
PIR	5.6	7.0
PMR	8.4	6.3
MIR	2.2	3.2
PMI	3.7	2.2
PR	3.6	2.7
IR	5.0	7.6
MR	1.3	1.1
PI	2.2	1.9
PM	4.1	4.3
MI	.2	.3
R	9.3	9.8
I	6.9	5.5
M	1.7	1.4
P	.6	.7
No Contact	22.0	20.7

C. Percent of All Graduates Practicing in the Same State as:	Year of Graduation 1945	1950
PMG	35.2	33.8
PG	11.4	11.6
MG	3.7	4.6
PM	4.1	4.3
M	1.7	1.4
G	21.2	22.9
P	.6	.7
No Contact	22.0	20.7

Appendix Table IX - Continued

SOURCES: A. Weiskotten et al., "Characteristics of Medical College Graduates," p. 1086;

B.C. Computed from Table II Weiskotten et al., p. 1088.

NOTES: Part A of Table I shows the simple figures for 1945 and 1950 graduates with residency training. This procedure, of course, double counts, since the four events are not mutually exclusive. Therefore, in Part B of Table I, these data are decomposed into their respective mutually exclusive categories. In Part C, internship and residency are grouped together into a single category, G, representing post-medical school graduate training.

P = Pre-Medical school residence state

M = Medical school state

I = Internship state

R = Residency state

G = Internship or residency state

As an adjunct to the references cited at the conclusion of each of the sections of this paper, the following provide some additional information on the major sources of data or influences on graduate medical education trends:

1. The Council of Teaching Hospitals of the Association of American Medical Colleges entitled COTH Surveys of House Staff Policies. The 1975 COTH study reported was the seventh annual survey in the series. It was mailed to the 400 members of COTH and 314 member hospitals responded. Data are reported on stipends for residents, fringe benefits, malpractice carriers, and house staff collective bargaining negotiations.

2. American Medical Association Directory of Approved Residencies 1974-1975 and 1973-1974. This directory contains all of the information of importance to physicians planning for residency training, for licensure, or for specialty board certification.

3. Federal Health Spending 1969-74 by Louis B. Russel et al, Center for Health Policy Studies, National Planning Association, D.C., 1974. This publication describes the health expenditures and programs of the Federal Government for the period 1969-74.

4. Journal of the American Medical Association, 75th Annual Report "Medical Education in the United States, 1974-75" December 29, 1975, Vol. 234, No. 13. This issue documents the number of medical students who are appointed to a residency before they receive their M.D. degree. It also indicates the shift that is occurring since as of July 1, 1975 many graduates are being appointed directly to the first year of residency.

5. Medicare - Medicaid Reimbursement Policies, Social Security Studies. Report submitted by the Institute of Medicine of the National Academy of Science, March 1, 1976 to the Subcommittee on Health of the Committee on Ways and Means US House of Representatives.

   This report and the studies entailed were performed at the request of Congress in 1973. It called upon the Institute of Medicine to conduct a study of the payment of physicians in teaching hospitals under Medicare and Medicaid and the effects of Medicare and Medicaid on the specialty and geographic distribution of physicians and the training of foreign medical graduates. Part I contains the summary of findings, conclusion and recommendations. Part II contains detailed data and findings on the organization and financing of teaching hospital activities and compensation of teaching physicians, graduate medical education, payment options and their impacts, from an in-depth study of 81 teaching hospitals.

   Further analyses are being done on the Institute of Medicine Study regarding the costs of graduate medical education. These should be available in the spring of 1977, as Part IV of the SSA report on Medicare and Medicaid.

6. "An Examination of Hospital Graduate Medical Education Costs Reimbursed by Part A, Medicare" Division of Medicine, Bureau of Health Manpower

   This study crystallizes some of the major concerns in financing graduate medical education identified through an analysis of Medicare cost reports and related education program data in 28 hospitals.

7. OMB Study of Recruitment and Retention of Federally-Employed Physicians and Dentists.

   Public Law 94-123 enacted on October 22, 1975, provided pay bonuses to physicians and dentists in the Veterans Administration, Department of Defense and the Department of Health, Education, and Welfare. In addition, Section 4 of P.L. 94-123 directs the Comptroller General and the Director of the Office of Management and Budget to submit reports to Congress on the short and long term problems facing Federal agencies in recruiting and retaining physicians and dentists, and give recommendations for action. This report, therefore, provided some data used in writing this paper.

8. The Health Professions Educational Assistance Act of 1976 (P.L. 94-484) contains several provisions affecting graduate medical education. Among these are:

   (1) Any institution which maintains a medical residency training program in family practice, general internal medicine, general pediatrics, or general obstetrics and gynecology and receives any federal assistance for these programs are to establish or maintain residency positions which are shared by two individuals (Title II, Section 209).

   (2) Foreign Medical graduates coming to the United States for graduate medical education, who have not passed parts I and II of the National Board of Medical Examiners Examination (or equivalent) nor demonstrated competency in oral and written English, must have prior assurance by an accredited school of assumption of responsibility for the FMG's competency. The FMG is to return to country of origin or last residence after 2 years of GME unless specific exceptions are made. (Title V, Section 601)

   (3) Medical schools, in order to be eligible for capitation grants for undergraduate students, much have in their direct or affiliated medical residency training programs in primary care at least 35% of all filled first year residency positions. (Title V, Section 770)

   (4) Grants may be made to schools of medicine and osteopathy to meet the costs of establishing Departments of Family Medicine. (Title VIII, Section 781).

(5) Each medical or osteopathic school participating in Area Health Education Centers will provide for or conduct a medical residency training program in family medicine or general internal medicine. (Title VIII, Section 781).